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CAVES OF THE EARTH:

THEIR NATURAL HISTORY, FEATURES, AND INCIDENTS.

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And love with fear the only God; to walk
As in his presence, ever to observe
His providence, and on him sole depend,
Merciful over all his works, with good
Still overcoming evil"—
"This having learn'd, thou hast attain'd the sum
Of wisdom: hope no higher." MILTON.

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CAVES OF THE EARTH.

CHAPTER I.

INTRODUCTORY.

THE "earth, given to the children of men" by the Divine Author of all being, according to revealed announcement, is a lofty and beneficent grant, viewed in itself, and in connexion with the purposes for which the donation has been bestowed. To be the scene of their pilgrimage in an incipient state of existence, intended to be introductory to a more advanced condition, and preparatory for it by a cultivated subjection to religious discipline; to be the spot in which a transient life is passed, in exercises of devotion, usefulness to each other, and self-furniture with knowledge improving to the heart and gratifying to the mind; these are the prime designs of Providence in making

over to the human race their terrestrial inheritance. The grant involves proprietorship on the part of the Donor. This is founded upon the original creation of material nature by the Almighty fiat, upon its preservance by his ceaseless agency, and its government by the medium of laws which he has impressed upon it. Ancient piety reverently recognised these truths, and the voice of Inspiration recurred to them, when delivering its farewell accents to the world, in the closing book of Scripture:—"The earth is the Lord's, and the fulness thereof; the world, and they that dwell therein."*—"The sea is his, and he made it: and his hands formed the dry land."†—"Fear God, and give glory to him; . . . and worship him that made heaven, and earth, and the sea, and the fountains of waters."‡

It is in harmony with these views to study the constitution and mark the aspects of the material world, while subordinating such pursuits to the truth according to godliness disclosed in the inspired pages, which demands supreme attention on the ground of its superior importance, as adapted to liberate our minds from sin and wretchedness, and elevate them

* Psa. xxiv. 1. † Psa. xcv. 5. ‡ Rev. xiv 7.

to immortal purity, activity, and joy. The former engagement, indeed, has valuable relations to the latter, and may be prosecuted, not only without infringement upon it, but in a way that shall strengthen the homage of the intellect, and the obedience of the heart to it.

Natural truth is, in many particulars, in clear and striking alliance with revealed truth. It illustrates the unity of the Divine nature, and the universality of the Divine presence and providence, by manifesting the universal action of fundamental laws, apparent as far as the regions of the creation can be examined by us. It testifies of all that infinitude of power and wisdom, which the Scriptures, in majestic language, ascribe to the "blessed and only Potentate." It proclaims the dependence of man, supplies him with motives to thankful devotion and to filial fear, by the display of benign adaptations and awful attributes, while it offers a rebuke to self-degradation and complacency by the vastness of that scheme of existence which he is able to apprehend, and its boundless amplitude beyond the grasp of his powers. It declares, likewise, his present subjection to a government which mingles in its dispensations painful discipline, and ap-

parently disastrous events, yet conserving the general good, a natural arrangement harmonizing with the view taken of the moral condition of men in the Scriptures, as subject to a sad peculiarity which merits chastisement, yet still the objects of mercy as well as judgment. It also brings before us in operation at present, instruments of change, modifying and altering the surface of the globe, and occasionally originating great catastrophes of a kindred nature to those recorded in the inspired history of man, when "all the fountains of the great deep were broken up," and still farther back, when "the waters under the heaven" were "gathered together unto one place," and the dry land appeared. These instruments now lie close at hand, and only wait the Divine mandate to act with the intensity formerly displayed, inducing that momentous physical change anticipated on the sacred page, "in which the elements shall melt with fervent heat, the earth also and the works that are therein shall be burned up."

Such are some of the important relations between that which the natural world reveals to our senses, and that which is proposed to faith "by the word of God, which

liveth and abideth for ever." The latter, indeed, needs not the former, but stands upon grounds quite independent of it, impregnable in its evidence, and unimpeachable in its authority, armed with its own motives and sanctions, of sufficient weight to exact a prompt and implicit compliance with its demands. Nevertheless we, frail and infirm, to whom it is a matter of difficulty to walk "as seeing Him who is invisible," may derive valuable aid in doing so from the analogy of his works and word, and may have the invisible things of God more deeply impressed upon us by thoughtful consideration of the things that are made, unfolding singular displays of beauty and majesty, intelligence and power, commending to our reverence the inspired records of his matchless perfection and ineffable glory.

Though but a small portion of the great and immeasurable scheme of Jehovah's empire, the earth is an integral part of it, one of its minor provinces, the workmanship of his hand, and the object of his care. To recognise this relationship, and mark the product because of the Artificer, are among the duties of religion. Hence it has been mentioned, as a characteristic

of the impious, that "they regard not the work of the Lord, neither consider the operation of his hands." Faculties of observation have been given unto us to be employed, and the scenic glories of nature—its curious, beautiful, and imposing formations, with its endless and admirable adaptations to useful purposes—will amply repay investigation.

The mind of the present age, indeed, wants no excitement to the study of natural phenomena. The appetite for it is strong and extensive, and its cravings are met by a cheap literature, replete with accurate information, interesting details, and elegant composition. But while the stores of the material world are ransacked, and its "works," confessed to be "great," are "sought out of all them that have pleasure therein," they are too often viewed altogether apart from their grand distinction and highest office, that of being His works whose we are, intended and adapted to lead the mind in adoration and reverence to the one God and Father of all. Thus instead of officiating—like the ladder in the dream of the patriarch—as a medium of communication, conducting the thoughts of the inquirer from earth to heaven, from the sensible to the

spiritual—the materialities around us, handled in the spirit of a philosophical paganism, become so many barriers of interception, hiding from the view of dependent creatures, the Framer of their habitation, and the Source of their blessings, who ought to be the supreme and constant object of gratitude, submission, affection, trust, and hope. The laws of nature are spoken of, in surveying the great plan of the universe, or its minor details, and with perfect propriety, as proximate instrumentalities. But, upon rational principles, thought cannot end here. Laws are not accidents, neither are they self-executive, but necessarily imply, in their action and effectiveness, the existence and administration of a lawgiver. The following pages, devoted to an interesting and important geographical feature, recognise this sentiment, and—

"Earth, with its caverns dark and deep,"

will supply examples of benign adaptation in apparent disorder, illustrative of the wisdom, goodness, and power, of its Creator, Preserver, and Lord. To make acquaintance with such examples is the peculiar right of the church of God, which he hath purchased with his own blood, for the "world" is a stated part of the

property belonging to its members, of which "all are yours" is the grand summary. "The earth is the Lord's;" and receiving the atonement provided for its transgressing "nations, and kindreds, and people," the medium of personal reconcilement to its Divine Author, it belongs to those who thus become "Christ's" to regard it as one of the "many mansions" of the "Father's house," whose interesting demonstrations of might and majesty may be viewed as supplying materials for present confidence and delightful anticipation.

CHAPTER II.

STRUCTURE OF CAVERNS.

Natural excavations—Three classes—Vertical cavities—Eldon-Hole—Hobbes and Cotton—Earl of Leicester—Descent by Mr. Lloyd—Natural shafts—Cwm Porth, in Wales—Tschingel peak—Chambered caverns—Castleton—Imitations—Labyrinths in Egypt and Crete—Law of variety.

In hilly countries, especially those which assume a decidedly mountainous character, and where the superficial formations consist of limestone, we meet with natural cavities, of various form, dimensions, and disposition. Some are vertical openings in the surface. Others follow a horizontal direction in the sides of the hills, but are marked with great diversity in their inclination. These are the "depths," the "deep places of the earth," and the "clefts of the rock," spoken of in sacred writ, which pass under the denomination of caverns, caves, and grottoes. Indifferently as these terms are commonly used, they might each receive a distinct application, which, for the sake of precision, should be observed. We might restrict the term grotto to perforations of the simplest

and smallest class; denote as caves those which are of larger size, but have a unity of structure, and dimensions which the eye can embrace at once; and consider as caverns those which exceed the proportions mentioned, are, in many cases, profound recesses, not to be fully explored, and often consist of a series of spacious compartments, connected by narrow passages. These excavations, the detail of which frequently displays an exquisite nicety of workmanship, to which the utmost efforts of man's artistic skill are insignificant, are generally found in wild and solitary sites. The surrounding scenery—the interior gloom—the fantastic contour of walls and roofs—as far as the torch-light exposes them—and the glitter of the crystallizations, with the unseen extent, powerfully impress the mind; and no idea can be given to those who have not witnessed it, of the intensely vivid colouring under which the external world appears, as if nature had put on fresh and fairer attire, upon emerging from any lengthened durance in these abodes of darkness. The skies seem to have acquired additional lustre, the grass a brighter green, and the flowers stronger hues, under the immediate effect of the transition.

Caverns, differing endlessly in the detail, may be divided into three groups, each group being marked by a leading structural peculiarity.

1. The first class are cavities, more or less narrow and prolonged, open to the daylight at one extremity, and penetrating laterally or vertically the surface of the earth.

The lateral direction is commonly followed, but the vertical is frequently met with. As an example of the latter, a yawning chasm in the limestone strata of the Peak of Derbyshire may be cited, locally called Eldon-Hole, formerly regarded as one of the wonders of that district, on account of its supposed unfathomable depth. Hobbes has celebrated it in Latin hexameters, and Cotton in rude English verse. Cotton endeavoured to ascertain its depth by a line from the brink, but without success, the weight of the rope being mistaken for the weight of the plummet, and hence suffered to descend, coiling up at the bottom, or at a point where it was accidentally stopped.

"But I myself with half the Peake surrounded,
Eight hundred, fourscore, and four yards have sounded,
And though of these fourscore returned back wet,
The plummet drew, and found no bottom yet;
Though when I went to make a new essay,
I could not get the least down half the way."

The earl of Leicester, in the reign of queen

Elizabeth, hired a man to make the actual descent. "He was let down," the account states, "about two hundred ells; and after he had remained at the length of the rope awhile, he was pulled up again, with great expectations of some discoveries; but, when he came up, he was senseless, and died, within eight days, of a frenzy." Cotton alludes to this circumstance:—

> "Once a mercenary fool, 'tis said, exposed
> His life for gold, to find what lies inclosed
> In this obscure vacuity—
> But the poor wretch paid for his thirst of gain,
> For being craned up with a distempered brain,
> A faltering tongue, and a wild staring look,
> He lived eight days, and then the world forsook."

The first who succeeded in exploring the spot was Mr. Lloyd, whose descent is related in the Transactions of the Royal Society for the year 1781. He was let down by eight men, and reached the floor at the distance of sixty-two perpendicular yards, where there was light enough to enable him to read print. From the bottom, fissures ascended sideways, which could not be traversed, but through which there was a strong current of air, and also of water, probably communicating with the subterranean hollows and streams common to the locality.

Of horizontal or lateral caverns, the Peak and the Mendip Hills supply many interesting examples.

2. Another group of caverns comprises those which are open to the day-light at both ends.

These are great natural shafts, resembling the tunnels of our railways, but without their regularity and straightness. Sometimes the shaft winds through a mass of rock, so that the day-light, at one extremity, cannot be seen from the other, and neither from the midway space, which is the scene of profound darkness. This is the case with the Cwm Porth, in Glamorganshire, a stupendous natural cavern, through the dark hollow of which the river Melte runs for nearly a quarter of a mile, while cattle graze, and harvests wave above it, on the incumbent rock. At the entrance, the cavern is about forty feet wide, and twenty high; numbers of forest, and other trees, of great diversity of form and foliage, growing spontaneously on either side of the opening. On a fine day there is sufficient light for examining about fifty yards of this natural tunnel, when it gradually fades away into impenetrable gloom, and torches are necessary to complete its inspection. In several other cases, these shafts are so straight as to allow of the passage of the day-light through them. Thus, the Tschingel Peak, one of the highest mountains

of the Dodi chain, is so perforated, that, twice in the year, in March and in September, the sun appears as if through a pipe, giving a singular and pleasing light to the valley beneath. Pontoppidan describes a similar opening through the mountain of Torghatten, in Helgeland, fifty fathoms in height, and a hundred in length. The hollow stone of Muggendorf is an analogous construction, examples of which are found in Saxony, Switzerland, on the coast of New Zealand, and on that of the island of Heligoland.

As the ancients drew from nature the form of the Corinthian capital, the acanthus leaves supplying the model of the foliage, so, probably, these natural shafts suggested the idea of tunnelling for roads and watercourses, which now enters so extensively into civil engineering, but which is by no means of recent origin. To keep the lake Copais, in Bœotia, below a certain level, artificial channels were constructed through the range of Mount Ptoon, separating the lake from the sea. This is one of the oldest existing monuments of Greek civilisation, still traceable, though the subterranean passages had become choked up by neglect before the time of Alexander, at whose instance they were

partially cleared. By a great tunnel in the island of Samos, cut through a mountain nine hundred feet high, and extending seven stadia in length, somewhat more than four thousand two hundred English feet, water was conveyed from a natural source to the capital. The Romans, following in the wake of the more ancient Etrurians, their teachers in the industrial arts, provided for the partial drainage of the Alban Lake by a tunnel, mostly cut through solid rock, more than a mile in length, through which the surplus waters were conducted into the Tiber. This remarkable work was completed in less than a year, in the early days of the republic, and remains unimpaired at present. To attain a similar object with reference to the lake Celano, the ancient Fucinus, the emperor Claudius employed thirty thousand men to cut a tunnel through one of its mountain barriers. This was about three miles long, and appears to have been executed by the excavators working in gangs simultaneously at several points, by means of vertical shafts, the plan usually adopted at present in such constructions. The completion of the work was celebrated by a barbarous fête. For the amusement of the emperor, and a multitude of specta-

tors on the neighbouring heights, two fleets were launched on the lake, manned with criminals, who were obliged to wage war against each other, and not a sham fight, but a battle, in which many were butchered. After the engagement, the dam was removed, and the waters of the Celano were admitted into their subterranean outlet, which led them off into the river Liris. Subsequently the channel was obstructed, but re-opened. It became again blocked up, remained so for centuries, but has been partially cleared by the present Neapolitan government, so as to prevent an undue rise of the lake. Another similar undertaking is the Grotta di Posilipo, near Naples, *supposed* to be as old as the reign of the emperor Tiberius. This is a tunnel, which pierces, for half a mile, the heart of a large rock, forming a passage for the old road from Naples to Pozzuoli. It is mentioned by Strabo, as wide enough to allow two carriages to pass, and was lighted by holes cut through the mountain from the top. It was largely improved by the Spanish viceroys, but is now comparatively deserted, owing to the formation of a new road.

3. The third and last group of caverns comprises those which consist of a succession of

lofty and spacious halls or chambers, usually connected by narrow and winding passages.

By far the finest home example of this class is the Peak cavern at Castleton, which extends two thousand two hundred and fifty feet into the mountain it penetrates, accessible to the visitor, and lies at the depth of about six hundred and twenty feet below its summit. After leaving the village, the pathway leads along a chasm, between two ranges of perpendicular cliffs, by the side of a rivulet which issues from the cavern, and runs brawling over the broken pieces of limestone in its course. At a turn of the road, a vast mass of rock is suddenly presented in front, with the mouth of the dark labyrinth, in the form of a depressed arch, a hundred and twenty feet in width, and forty-two in height. Entering beneath it, and proceeding about thirty yards, the first compartment through which a dubious twilight prevails is crossed, the roof gradually becoming lower, and the excavation narrower, till a confined passage is reached, at which all trace of the blaze of day is lost. After traversing this aperture about twenty yards, the first great interior cavity is reached, and five other capacious openings follow. At different points,

candles are lighted by the guides, at considerable heights, which display the dimensions of the successive chambers, with the ribs and layers of massy rock which form the roofs and sides. At one spot, a small lake has to be crossed in a boat or skiff, the passenger lying down at the bottom, owing to the overhanging rock descending to within twenty inches of the surface of the water. A singularly striking effect is produced by the explosion of a small quantity of gunpowder, wedged into a crevice of the rock, at the far extremity of the cavern, the sound of which rolls along it like a loud and long-continued peal of thunder, but with a deep, muffled intonation. Upon retracing his steps, the visitor is usually stayed at a point of rock which commands a view of the entrance, in order to observe the effect of the first return to the light of day. The exterior rocks, as seen from thence through the mouth of the chasm, appear as if highly illuminated; the plants and mosses, faded with the heat, and soiled with the dust of autumn, exhibit a vernal freshness; and the impression produced is that of a brilliant day reigning without, though the atmosphere may be hazy, and the sun veiled with clouds.

Man, in tropical countries, has largely em-

ployed these natural excavations, and produced many imitations of them, to serve for the purpose of habitation, interment, religion, or concealment. It was from them that the hint was taken by the ancients, to construct labyrinths, excavations upon an involved plan—an artifice of royalty, adopted with a view to personal security, or the secreting of treasures.

The original labyrinth was near Crocodilopolis, the city of crocodiles, afterwards Arsinoë, not far from the lake Mœris, in Egypt, the work of its ancient kings. Herodotus describes it, from personal observation, as one of the greatest efforts of human industry and art, consisting of fifteen hundred chambers excavated under ground, and as many above the surface, the whole inclosed by a wall. The Egyptians, he relates, would not allow him to enter the subterranean apartments, but he freely inspected the rest, and expresses his admiration at the great number of winding passages, and endless mazes, among the superior chambers.—A modern town, Medinet el Faïoum, occupies the site of Arsinoë, built out of its materials, and many remains of antiquity exist in the neighbourhood, but no traces of the labyrinth have been discovered.

It is very likely, that, in the destruction of the external fabric, the underground part became filled up with the ruins, and the sands wafted from the desert, or the alluvial left by the Nile in its annual overflowings, may have further contributed to its disappearance.—After the model of the Egyptian labyrinth, a second was constructed by Porsenna, in Tuscany; a third in Lemnos; and a fourth in Crete. The latter, attributed to Dædalus, a mythical personage, under whose name the Greek writers personified the rise of the arts of architecture and sculpture, the name itself implying *skill*, is referred to in the Æneid,

> "As the Cretan labyrinth of old,
> With wand'ring ways, and many a winding fold,
> Involved the weary feet without redress,
> In a round error which denied recess."

Whether identical or not with the subject of classic reference, there is a singular excavation at present in Candia, (Crete,) cut through a freestone rock in the form of an intricate maze. It consists of a number of chambers, connected by passages, low, narrow, and winding, the passages extending through their circumlocutions about three-quarters of a mile, but formerly much farther, as many have been stopped up by the falling in of the rock.

Tournefort, who explored this place in the year 1700, found the entrance so low as not to be passable without stooping. Proceeding onwards with flambeaux, a thousand "twistings, twinings, sinuosities, and turn-again lanes," appeared, defying the efforts of the traveller to penetrate to the farther end, or, having done so, to find his way back without some precautions being observed. The method adopted by the party named was to scatter straw along the ground, and attach numbered scrolls to every difficult turning. Numerous inscriptions in the interior with dates showed that the place had often been threaded, one of which was, *Qui fu el strenuo Signor Zan de Como cap^no de fanteria*, 1526—"Here was the valiant Signor John de Como, captain of foot, 1526." The site of this labyrinth is one of the hills at the base of Mount Ida.

Each of the three general forms under which natural excavations are classed in this chapter, includes an endless variety in the manner of filling up the broad outline, and in the scenery associated with it. Here a recess presents itself into which the ocean pours its tide, every splash of its waves giving out a solemn sound; a second is a channel for waters issuing from

inaccessible fountains in the bosom of the earth; a third opens only to the light and air of heaven, the casual visiting of man, and the regular haunting of the birds of night; others show their dark entrances boldly in the naked cliffs, walling cultivated valleys; while many lie at the head of rugged and gloomy ravines, concealed behind interlacing shrubs and trees. In a similar manner, through the whole range of terrestrial nature, objects of the same group have characteristic differences—the "mountains, and all hills; fruitful trees, and all cedars," flowers, grasses, rivers, and streams. There is thus a boundless diversity stamped upon the general superficies of the globe, and constituted as men are, with an appetite for novelty and a capacity of sensorial gratification, the arrangement illustrates the adaptation of the dwelling to its inhabitants, or of the occupiers to their residence. "O Lord, how manifold are thy works! In wisdom hast thou made them all: the earth is full of thy riches."

CHAPTER III.

POSITION OF CAVERNS.

Fissures in granite and gneiss—Mountain or cavern limestone—Interior cavities—Absorption and reappearance of rivers—Speedwell mine—Subsidence in the Caraccas—In the harbour of Marseilles—Stalactites and Stalagmites—Tournefort—Stalactical localities—Blue John mine—Macallister's cave—Description by Scott—Sapphire grot—Sandstone caves—Nottingham Castle rock—Basaltic—*Grotte des Fromages*—Law of utility.

With respect to the sites of these vacuities, they are not commonly found in the granite, gneiss, or slate rocks. Those that occur are principally vertical fissures of unknown depth, and perfectly incapable of being explored. Such is the cave of Marienstadt, and the enormously deep gulf at Frederickstal in Norway, where a stone thrown in requires from a minute and a half to two minutes to give the echo of its fall. It has been calculated, therefore, to have a precipitous depth of from 39,866 feet to 59,049—nearly twice the height of the loftiest summits of the Andes. Of all the formations that constitute the super-

ficies of the globe, the mountain limestone supplies the most numerous examples, sometimes called, on account of their abundance, "the cavern limestone." This rock appears in great force in Yorkshire, Derbyshire, and Somersetshire, exhibiting some of the most romantic pictures in our island,

> "So wondrous wild, the whole might seem
> The scenery of a fairy dream;"

and with a few inconsiderable exceptions, presented by the transition limestone of Devonshire, and the magnesian limestone of Somersetshire, all the English caverns are found in the carboniferous or mountain limestone. It appears to be internally traversed by fissures and cavities to a great extent, for streams that flow across it are engulfed, and, after pursuing a subterranean course, reappear at the surface. Thus the rivers Hamps and Manifold, on the confines of Derbyshire and Staffordshire, sink into the disjointed strata, and, after running under ground for several miles, emerge in the gardens of Ilam Hall. The funnel-shaped hollows in the limestone, where these and other streams are similarly absorbed, are provincially called "swallows." Near the city of Wells, in the limestone of the Mendip Hills, a three-chambered cavern occurs, often visited

by the curious, from which Pope derived some of the materials of his artificial grotto at Twickenham. The farthest chamber has a fine stream of water running through it, eight or ten feet wide and two deep, which sinks through a cleft of the rock, and bursts out in the adjoining valley as the source of the river Axe. One of the Surrey rivers, connected with widely different strata, has been erroneously supposed to exhibit the phenomenon of an underground course. Thus Milton, in a juvenile poem, speaks of the

"Sullen Mole, that runneth underneath;"

a line imitated by Pope, in his Windsor Forest, who calls the stream, the

"Sullen Mole, that hides his diving flood."

The truth is, that, in very dry summers, the river is absorbed by its porous bed in various places, and presents a succession of stagnant pools alternating with dry ground, but has no subterranean channel.

A vacuity of prodigious extent, deep-seated in the bowels of the limestone of north Derbyshire, was found by the miners in searching for lead, at what is now the Speedwell mine in that county. This great natural cavern is nearly half a mile in the interior of the rock.

It is reached by an artificial excavation, which commences at the depth of a hundred steps below the base of the mountain, amid profound darkness. The excavation, the work of the miner's pick-axe, is from three to four feet deep in water, and so narrow that the sides may readily be touched, with the ceiling above. Proceeding on this confined subterranean canal in a boat pushed along by the guide, the visitor is at length landed on a ledge of rock protected by an iron rail. Above him, a cavern expands to an unknown height, while below him, on one side, it extends to an unknown depth, the impervious gloom only for a short distance removed by the torches, and the startling sound of the water falling into the abyss, constituting a scene impossible to be witnessed without some degree of nervous trepidation. During the further excavation of the mine, this tremendous gulf received upwards of forty thousand tons of material without any impression being apparently made upon its capacity, while into the awful dome overhead rockets have been projected, which have risen to their usual height, exploded, and thrown out their beautiful coruscations as freely as if ascending simply beneath the vault of heaven.

The existence of similar cavities, secluded from the observation of man, and completely inclosed by the masonry of the earth's crust, has been shown by events which have excited consternation and surprise, such as subsidences of the surface constituting their comparatively thin ceiling, and the drying up of large collections of water, through the giving way of their beds, which have been the roofs of underlying vacuities. Thus, in the year 1790, a part of the forest of Aripas, in the Caraccas, subsided, and formed an extensive hollow into which the superficial waters flowed, originating a lake, at the bottom of which the trees of the forest remained standing, and were clearly seen from the surface, their tops being at some distance beneath it.—On June 28th, 1812, the water in the harbour of Marseilles suddenly and violently sank, then returned with equal violence, the movement being repeated several times, till the equilibrium was restored, occasioning considerable damage to the shipping. The gradual wearing away, and ultimate falling in, of certain parts of the floor of the ocean, covering hollows and cavernous places into which the waters rush, offer a natural and easy explanation of such events.

Limestone caverns are remarkably characterised by the formation called *stalactite*, a Greek word, which signifies distillation, or dropping, and alludes to the manner in which the formation is produced.

Water, containing carbonate of lime, held in solution by carbonic acid, trickling through crevices in the roofs, gradually loses its carbonic acid on exposure to the air, and deposits a pellicle of lime. By a similar process, additions are made to the deposition, pellicle after pellicle. Hence stalactites chiefly occur in long masses, like icicles depending from the roofs of caverns, or giving a pillared aspect to their sides. But larger drops of water fall to the ground before depositing their lime, in which case formations are produced, projecting upwards from the floor, to which the term *stalagmite* is applied. Frequently the descending and ascending depositions increase till they unite, and form consecutive columns, a series of which bears a strong resemblance to the columns and arches of a Gothic cathedral. Thus, stalactites and stalagmites exhibit the phenomenon of growth, but in opposite directions, as if endowed with vegetable life. Indeed, from their progress, and from the forms occa-

sionally assumed, the idea was once entertained, that they were really a species of stone-plants. Tournefort remarks confidently: "Once again I repeat it, it is impossible that this should be done by the droppings of water, as is pretended by those who go about to explain the formation of congelations in grottoes. It is much more probable that these other congelations we speak of, and which hang downwards, or rise out different ways, were produced by our principle, namely, vegetation."

These formations—varying, wild, fantastic, and beautiful in their aspect—now exhibiting massive, and now delicate workmanship—were regarded, in ages of ignorance and superstition, as the performances of the invisible powers, the nymphs, who were supposed to haunt caves and grottoes. Thus Homer speaks of a cave at the head of a port in Ithaca:—

"High at the head a branching olive grows,
And crowns the pointed cliffs with shady boughs;
Beneath, a gloomy grotto's cool recess
Delights the Nereids of the neighb'ring seas;
Where bowls and urns were form'd of living stone,
And massy beams in native marble shone;
On which the labours of the nymphs were roll'd,
Their webs divine of purple mix'd with gold."

Virgil, following in the track of his Grecian master, leads Æneas to a port on the coasts of Libya, and to a cave, described as containing

"sweet waters, and seats of living rock—*vivo saxo*—the abode of the nymphs."

The amount of deposition in some caverns is immense. The most remarkable foreign examples are in the grotto of Antiparos, belonging to the Greek Archipelago, in the cave of Adelsburg, near Trieste, in the Woodman's cave, in the Harz in Germany, and in that of Auxelle in France. In our own country, the finest specimens occur in the Blue John mine in the Peak, a natural cavern worked as a mine in order to obtain the beautiful *fluor spar*, after which the spot is named. Here there is a striking stalactical formation, locally called the "organ." The stalactites, of a delicate pearly yellow colour, have grown downwards to a ledge of rock, and present a series of fairy columns, resembling the pipes of the instrument after which the site is called. In Scott's "Lord of the Isles," the page Allan is represented indulging in reminiscences, during his night's watch, of a spot celebrated for the beauty and abundance of these fine arts of nature:—

"he turn'd
To tales at which his youth had burn'd,
Of pilgrim's path by demon cross'd,
Of sprightly elf, or yelling ghost,
Of the wild witch's baneful cot,
And mermaid's alabaster grot
Who bathes her limbs in sunless well,
Deep in Strathaird's enchanted cell.

Thither in fancy rapt he flies,
And on his sight the vaults arise;
That hut's dark walls he sees no more,
His foot is on the marble floor,
And o'er his head the dazzling spars,
Gleam like a firmament of stars!"

The "alabaster grot" is commonly called Macallister's cave, from the name of the proprietor; and "Strathaird's enchanted cell" alludes to the domain in the island of Skye, in which it is situated. "The first entrance," says Scott, in his Diary of a Voyage among the Western Isles, "is rude and unpromising, but the light of the torches with which we were provided, is soon reflected from roof, floor, and walls, which seem as if they were sheeted with marble, partly smooth, partly rough with frost-work and rustic ornaments, and partly wrought into statuary. The floor forms a steep and difficult ascent, and might be fancifully compared to a sheet of water, which, while it rushed whitening and foaming down the declivity, had been suddenly arrested and consolidated by the spell of an enchanter. Upon attaining the summit of this ascent, the cave descends with equal rapidity to the brink of a pool of the most limpid water, about four or five yards broad. There opens beyond this pool a portal arch, with beautiful white chasing upon the sides, which promises a continuation of the

cave. One of our sailors swam across, for there was no other mode of passing, and informed us that the enchantment of Macallister's Cave terminated with this cave, beyond which there was only a rude ordinary cavern. But the pool, on the brink of which we stood, surrounded with the most fanciful mouldings, in a substance resembling white marble, and distinguished by the depth and purity of its waters, might be the bathing grotto of a naiad. I think a statuary might catch beautiful hints from the fanciful and romantic dispositions of the stalactites. There is scarce a form or group that an active fancy may not trace among the grotesque ornaments which have been gradually moulded in this cavern by the dropping of the calcareous water, and its hardening into petrifactions. Many of these have been destroyed by the senseless rage of appropriation among recent tourists, and the grotto has lost, through the smoke of torches, much of that vivid silver tint which was originally one of its chief distinctions. But enough of beauty remains to compensate for all that may be lost."

In the limestone of the island of Capri, at the southern entrance of the bay of Naples, a cave has very recently been discovered, called the

Sapphire Grot, which is one of the most beautiful objects in the realm of nature, and in its character altogether unique. At the base of an almost perpendicular cliff, which dips from a great height into the sea, a semicircular opening appears above the edge of the water, in shape resembling the mouth of an oven, and scarcely exceeding it in size. Approaching the opening in a small skiff, when the sea is perfectly calm, the visitor, stooping below the side of the skiff, is pushed through the narrow passage by the guides. He thus enters a cavern of considerable dimensions, the roof spanning like a dome a placid expanse of water, of the deepest azure hue, the sides and roof also having a rich blue colour, a peculiarity which has conferred upon the place the name of the Sapphire Grot. Under ordinary circumstances, owing to the smallness of the opening, it would be merely a dark and gloomy recess. The cause of its different appearance is clearly explained by Dr. Hogg. The entrance is to be considered as the top of a subaqueous arch, springing up from the sea on one side, and out of a ledge of rock on the other. The interior is thus chiefly illuminated by rays passing through the blue waters of the surrounding ocean, which diffuse a rich sapphire

over the walls and roof of this singular cave. The passage of light through the aqueous medium is curiously illustrated by the shadow of the boat being thrown upon the roof; and upon the direct rays being excluded by covering up the entrance, the cerulean tints become much more intense. Many travellers are now led to Capri by the re-discovery of this spot, for it was, no doubt, known to the ancient Romans, the emperor Tiberius having made the island, for a long period, the scene of his abode and of his crimes.

After the limestone, the gypsum of the new red sandstone system, in which are the principal saliferous deposits, presents the greatest number of natural cavities. They occur also in the sandstone, but are of unimportant size, having broad openings and little depth. The rock on which the town and castle of Nottingham are built, a coarse sandstone, is remarkable for its numerous caverns, some of which, however, are artificial. The name of the town is supposed by some to point to this circumstance, being derived from the Saxon *snodengaham*, signifying the "house of caverns."

In the volcanic rocks, they are very abundant, both with reference to those of ancient, and of comparatively recent origin. In the island

of Staffa, off the west coast of Scotland, composed of pillared basalt, there is the grand Cave of Fingal; and in the basalt rocks at Bertrich-Baden, there is the very curious *Grotte des Fromages*, the basaltic columns of which have been so worn by the atmosphere, as to resemble a pile of cheeses, after which the locality has been denominated. In the vicinity of Quito, cavern formations occur in modern porphyry; and, upon a small scale, they are found in the lava of Vesuvius, ejected during the last few centuries. They are also common in Icelandic lavas, and in several cases are of prodigious magnitude.

Nothing is more incorrect than the idea, that the Master-hand has been exerted at random in moulding the globe, or that "an enemy hath done this," opposing the primal design, inferred from the confused and shattered condition of the superficial formations. There is wise contrivance in the apparently chaotic disorder; and benevolent purpose to be traced in the wild, convulsed, and seemingly unsystematic frame of the earth. Had its face been without the derangements which appear like faults in its constitution, there would have been no foundation for the facts thankfully recognised in the psalm:—

"The springs arise among the valleys,
They run among the hills.
There the thirsty wild beast cools itself,
The wild ass quenches his thirst.
The fowls of heaven dwell beside them,
And sing among the branches."

Owing to the displacement of strata, creating chinks, rents, and cavernous sites, channels are prepared, through which the rains can percolate into internal reservoirs, where they are filtrated from the earthy admixtures taken up on their passage, and are again returned to the surface at a lower level by the same machinery in the form of springs. The end of material arrangements is not always apparent to us, but this is the exception, and not the rule. The design is clearly developed in an immense preponderance of instances, and it is one of obvious importance. Revelation gives the true interpretation of terrestrial nature in the saying, "The earth is full of the riches of the goodness of the Lord;" and as the advance of knowledge has shown what were simply viewed as dreadful phenomena, in ages of ignorance, to be necessary conditions, a just foundation is laid in this fact for the confidence, that, behind the dark clouds of Providence in the Christian life, there is the light of gracious intention to be eventually made manifest.

CHAPTER IV.

NATURAL HISTORY OF CAVERNS.

Causes of change—Power of water—Action of waves—Souffleur in the Mauritius—Staffa—Fingal's Cave—Basaltic columns—Sir Joseph Banks—Maculloch—Sir W. Scott—Formation of columnar basalt—Experiment by Mr. Watt—Basalt on the Columbia river—Scripture epochs of terrestrial change—Caverns in lava currents—Iceland—Dr. Henderson—Surtshellir—Scandinavian mythology—Solid contents of lava streams—Eruption of the Skaptar-Yökul—Table-land of Quito—Remarkable mountain music—Heard by Humboldt—Heard in Arabia-Petræa—In the Pyrenees—Subterranean noises in Mexico—Representations of Scripture.

From testimony and from observation we have evidence of the fact, that, within the period of authentic history, the surface of the earth has undergone alteration, and is at present subject to a process of constant change. With the same truth we might speak of the fashion of this world passing away, in a physical sense, alluding to vicissitude in the features of inanimate nature, as we adopt that language to express the transitions of society, the succession of one generation of men after another, and the decay which surely awaits the monuments of their power and glory. Natural causes—some

incessant in their operation, general in their sphere, but very slow in producing any marked effect; others, occasional in their working, limited to particular districts, but acting with tremendous energy—combine to modify the contour of the globe, and sensibly to disturb its superficial form and lineaments. Reference is here made to the wearing influence of the atmosphere and the rains, "in breeze, or gale, or storm"—to the abrading and transporting power of streams and rivers, augmented by casual or periodical floods—to the action of the waves, tides, and currents of the ocean upon the coasts—to the agency of excessive temperature, and of sudden changes of temperature—and to the violent forces exerted in earthquakes and volcanic explosions. These are instruments of change, which, during the comparatively short period in which physical events have been chronicled by enlightened nations, have affected the configuration of the earth, to whose agency it is now subject, and will be during the continuance of its present constitution.

"The waters wear the stones."* Impression, in course of time, is made upon the most com-

* Job xiv. 19.

pact mass of rock, by the constant fall of a few drops of water upon it; and the level slab gradually assumes a basin-shaped appearance, as if the mason's chisel had been at work upon it. Job introduces the physical fact as an image of the sure wasting of the strongest human frame under the wear and tear of time, alluding also to the action of a river in flood upon the adjacent country, as an illustration of the effect of the stream of years upon the life that now is:—

> "As the waters wear to pieces the stones,
> As their overflowings sweep the soil from the land,
> So consumest thou the hope of man."

Besides the effect here noticed, well expressed by Tyndale, "the floudes waste away the gravell and the earth," many remarkable examples occur of the power of running streams, at their ordinary flow, to carve out for themselves channels in the hardest rocks by gradual erosion. In this way masses of basalt in the volcanic region of central France have been invaded, and deep furrows cut through them by the rivers of the district. We have here one part of the machinery which has operated in the construction, enlargement, or modelling of cavern formations, very commonly connected with subterranean streams; and especially is

this probable of those that are situated in limestone rocks, considering the soluble nature of the material. Irregular beds of sand and clay in the limestone strata, subsequently washed out by the waters, or small original fissures in the rock, enlarged by their constant percolation, offer a ready partial solution of its peculiarly cavernous structure. The great Peak cavern is often, to a considerable extent, closed up in winter, owing to the rise of the waters that run through it; and a large quantity of debris has to be removed from it in spring, to prepare it for summer tourists.

In the case of many caverns situated in bold promontories, or in the cliffs of an exposed coast, the ocean has plainly been one of their artificers, and in various spots they appear in different stages of advance, owing to the rough handling of its waves. The Journal of the Royal Geographical Society contains an account of a remarkable point on the south side of the island of Mauritius, called "the Souffleur," or Blower, from the following feature. There is a large mass of rock running out into the sea from the main land, to which it is joined by a narrow neck, not two feet broad. The constant beating of the tremendous swell has so

undermined the projection toward the centre, as to give it the appearance of a Gothic building, with its arches; and the water has forced two passages vertically upwards, which are worn as smooth and cylindrical as if cut with a chisel. A heavy sea rolling in, of course fills in an instant the hollow caverns, and, finding no other egress, it rushes through these passages or chimneys, and ascends roaring furiously to the height of full sixty feet in the air. Upon the wave retiring, the air rushes through the apertures to fill the vacuum beneath, with a loud humming sound, the noise of the wind and water, when the Souffleur is in energetic action during a storm, being heard distinctly through the distance of two or three miles. The chalk cliffs of Flamborough Head, the rocks between that point and Scarborough, and the schistus near Whitby, where the shore lies open to the roll of the North Sea, dashing against it impetuously at high tides, and in wintry storms, supply several interesting instances of its effect. In the latter neighbourhood, Hob Hole, a cave seventy feet long by twenty wide, at the mouth, had, within the memory of man, a natural pillar left at the entrance, presenting a singularly interesting

appearance; but this hardier fragment at length yielded to the powerful element which had previously swept away the adjacent mass. The western coast of Scotland, and the shores of the islands along it, upon which the whole might of the Atlantic expends its strength, furnish many examples of caverns, due at least, to some extent, to the scooping action of its waves, among which are the Boat Cave in the island of Staffa, Mackinnon's, or the Cormorant Cave, in the same locality, which has its name from the number of those birds that haunt it, and the Cave of Fingal, which deserves some farther notice.

Staffa, about a mile in length by half a mile in breadth, lies off the west coast of the isle of Mull, and consists of three beds of rocks. The lowest is a tufa, often amygdaloidal, or containing pores filled up with mineral substances, so as to resemble a paste studded with almonds, (*amygdala*, an almond.) Next above this is columnar basalt, and then an irregular mixture of columnar and amorphous basalt, the whole rising, at the highest point, one hundred and forty-four feet above the level of the sea. The basaltic columns are of a dark grayish-black colour, the pillars themselves not exceeding

fifty-four feet in height, and being, in general, less, with a usual diameter of two feet, and presenting five or six sides. They are variously curved and straight, inclined and horizontal, but most frequently perpendicular in the cliffs. Fingal's Cave, the great natural curiosity of this small island, was first described by sir Joseph Banks in a letter to Mr. Pennant. He may almost be styled its discoverer, the knowledge of its existence being entirely confined to a few individuals in the neighbourhood, previous to his visit in 1772. He remarks:—"In the sound of Mull we came to anchor on the Morven side, opposite to a gentleman's house, called Drumnen. The owner of it, Mr. Macleane, having found out who we were, very cordially asked us ashore. We accepted his invitation, and arrived at his house, where we met an English gentleman, Mr. Leach, who no sooner saw us, than he told us, that, about nine leagues from us, was an island, where he believed no one, even in the Highlands, had been, on which were pillars like those of the Giant's Causeway. This was a great object to me, who had wished to have seen the causeway itself, would time have allowed. Therefore we resolved to proceed directly, especially as it was just in the way to the Columb-kill (Iona.)

"At nine o'clock, after a tedious passage, having not a breath of wind, we arrived, under the direction of Mr. Macleane's son and Mr. Leach. It was too dark to see anything, so we carried our tent and baggage near the only house on the island, and began to cook our suppers, in order to be prepared for the earliest dawn, to enjoy that which we had now raised the highest expectation of.

"The impatience which every body felt to see the wonders which we had heard so largely described, prevented our morning's rest. Every one was up and in motion before the break of day, and, with the first light, arrived at the south-west part of the island, the site of the most remarkable pillars, which we no sooner reached than we were struck with a scene of magnificence, which exceeded our expectations, though formed, as we thought, on the most sanguine foundations, the whole of that end of the island being supported by ranges of natural pillars, mostly above fifty feet high, standing in natural colonnades. Compared to this, what are the cathedrals, or the palaces, built by man? mere models or playthings, imitations as diminutive, as his works will always be, when compared to those of nature. Where is now the boast of the architect? Regularity, the

only part in which he fancied himself to exceed his mistress, Nature, is here found in her possession, and here it has been for ages undescribed. With our minds full of such reflections, we proceeded along the shore, treading upon another Giant's Causeway, every stone being formed into a certain number of sides and angles, till, in a short time, we arrived at the mouth of a cave, the most magnificent, I suppose, that has ever been described by travellers. The mind can hardly form an idea more imposing than such a space, supported on each side by ranges of columns; roofed by the bottoms of those which have been broken off in order to form it; between the angles of which a yellow stalagmitic matter has exuded, which serves to define the angles precisely, and at the same time, vary the colour with a great deal of elegance. The whole is lighted from without, so that the farthest extremity is very plainly seen; and the air within being agitated by the flux and reflux of the tides, is perfectly dry and wholesome, free entirely from the damp vapours with which natural caverns in general abound. We asked the name of it. The guide said, 'The cave of Fhinn.' 'What is Fhinn?' said we. 'Fhinn Mac Coul, whom

the translator of Ossian's works has called Fingal.'"

The following are sir Joseph Banks's measures of this extraordinary spot:—

	feet.	inch.
Length of Fingal's cave from rock without	371	6
Length from pitch of the arch	250	0
Breadth of Fingal's cave at the mouth	53	7
Breadth at the farther end	60	0
Height of arch at the mouth	117	6
Height of arch at the end	70	0
Height of an outside pillar	39	6
Height of one at the north-west corner	54	0
Depth of water at the mouth	18	0
Depth at the bottom of the cave	9	0
Direction of the cave, north-east by east (magnetic)		

Staffa is supposed to have received its name from the Norwegians, who frequently came in roving piratical bands to the coast, and held permanent possession of some of the islands for a considerable period, *staf* signifying a prop, and figuratively a column, alluding to its singular structure. The Gaelic name of the cave, *Llaimhbinn*, the cave of music, may refer to the voice of the waves dashing into its recesses.

Two recent visitors have left on record their impressions concerning this striking object. "If too much admiration," says Maculloch, "has been lavished on it by some, and if, in consequence, more recent visitors have left it with disappointment, it must be recollected, that all descriptions are but pictures of the

feelings of the narrator; it is, moreover, as unreasonable to expect that the same objects should produce corresponding effects on all minds, on the enlightened and on the vulgar, as that every individual should alike be sensible of the merits of Phidias and Raphael, of Sophocles and Shakspeare. But even if this cave were destitute of that order and symmetry, that richness arising from multiplicity of parts combined with greatness of dimensions and simplicity of style, which it possesses; still the prolonged length, the twilight gloom half concealing the playful and varying effects of reflected light, the echo of the measured surge as it rises and falls, the transparent green of the water, and the profound and fairy solitude of the whole scene, could not fail strongly to impress a mind gifted with any sense of beauty in art or in nature, and it will be compelled to own, it is not without cause, that celebrity has been conferred on the cave of Fingal." Sir Walter Scott, on renewing an excursion, remarks: "I am not sure whether I was not more affected by this second than by the first view of it. The stupendous columnar side walls, the depth and strength of the ocean with which the cavern is filled, the variety of tints

formed by stalactites dropping and petrifying between the pillars, and resembling a sort of chasing of yellow or cream-coloured marble filling the interstices of the roof, the corresponding variety below, where the ocean rolls over a red, and, in some places, a violet-coloured rock, the basis of the basaltic pillars, the dreadful noise of those august billows so well corresponding with the grandeur of the scene, are all circumstances elsewhere unparalleled."

The uninterrupted swell and lash of the billows for ages has not been without its effect in modelling this stately erection after the fashion in which it is now beheld, but the texture of the rock, and its columnar arrangements, attest the action of another agency in its disposition and elevation above the water-floods—that "fervent heat" with which the future destiny of the terraqueous elements is connected by the announcements of Scripture, which the active volcanic vents prove to be glowing in the bowels of the earth, and whose extensive operation in the remote past is recognised by natural appearances, and by the terrestrial changes which find a place in the sacred records—His doing who is Lord of all. Basalt, a rock of a compact texture, and

usually of an iron-grey colour approaching to black, occurs in the form of dykes, and in horizontal beds, constituting immense masses, as in the Deccan in India, where it occupies many thousand square miles of the surface. The columnar and prismatic structure which renders it so much an object of interest, giving it the appearance of a work of art, is frequently displayed, and occasionally also by porphyry and greenstone. Experiment suggests that this structure is due to a kind of crystallization while cooling down under pressure from a melted state. A mass of the Dudley basalt was fused by Mr. Gregory Watt, and allowed to cool slowly, when globular masses were formed, which enlarged and pressed towards each other till regular columns were the result. At the Giant's Causeway in the north of Ireland; on the banks of the little river Volant in France; at Titan's Piazza, on Mount Holyoke, in Massachusetts; and at the Palisadoes on the Hudson river, some of the finest examples of this beautiful natural architecture are met with, but its most extensive development is in a region with which we are only scantily acquainted, the Oregon country, where the Columbia river

passes through a portion of the Rocky Mountains, ranging from four hundred to one thousand feet high on each side, their walls presenting successive rows of greenstone or basaltic columns, superimposed upon each other, divided by narrow horizontal beds of different composition.

That our present continents have been covered by the ocean, and largely subject also to igneous action, is a conclusion derivable from their appearances; and while it only enters very subordinately into the design of inspired truth to touch upon the material history of our globe, it is yet interesting to mark in its pages the recognition of an era when a flood of waters prevailed over the dry land, from which they subsequently retired, and one still more remote when the same element completely engirdled it. No mention is made of any secondary agency accomplishing the will of the great Supreme, in the waters being "gathered together unto one place," and the dry land appearing. The constitution of the earth and seas is simply recorded as transpiring at the instance of the Divine volition without any mediate instrumentality, as if anticipating the tendency of

human nature, in dealing with means to rest in them, and view the machinery apart from him who constructs, arranges, and sets it in motion. "And God said, Let the waters under the heaven be gathered together unto one place, and let the dry land appear: and it was so. And God called the dry land Earth; and the gathering together of the waters called he Seas."* Thus—

"He spake, and it was done;
He commanded, and it stood fast."†

Still, one of our inspired guides, expatiating upon the Divine power expressed in the natural creation, in a song of praise and adoration, partially raises the veil from the mode of operation—

"Bless the Lord, O my soul.
O Lord my God, thou art very great;
Thou art clothed with honour and majesty.
Who coverest thyself with light as with a garment:
Who stretchest out the heavens like a curtain:
Who layeth the beams of his chambers in the waters:
Who maketh the clouds his chariot;
Who walketh upon the wings of the wind:
Who maketh his angels spirits;
His ministers a flaming fire:
Who laid the foundations of the earth;
That it should not be removed for ever.
Thou coveredst it with the deep as with a garment:
The waters stood above the mountains,
At thy rebuke they fled;
At the voice of thy thunder they hasted away.
They go up by the mountains; they go down by the valleys
Unto the place which thou hast founded for them."‡

The latter part of this song is a direct allusion

* Gen. i. 9, 10. † Psa. xxxiii. 9. ‡ Psa. civ. 1—9.

to the event historically recorded on the opening page of Scripture. The picture drawn is, that of the recession of the fluids from the general superficies; and the instrument in action in the hands of the omnipotent Disposer, couched under the expression, "the voice of thy thunder," meets with a corresponding reality, in that upheaving power which the volcano now exerts, and which has left a register of its more widely extended activity and effect, in the elevated, fissured, and cavernous aspect of mountain districts.

The formation of caverns in recent lava currents is easily explained by a part of the stream meeting with an obstruction in its path, causing an overlapping of the persistent fiery torrent, and an inclosed hollow eventually exposed at one extremity by the wearing away or breaking in of the crust. Iceland abounds with these constructions in the vast masses of lava which have been poured from its numerous volcanoes. One near the summit of Husafell, a rugged mountain of igneous products, was visited by Dr. Henderson, and "on being informed," he remarks, "that it is used as a sheep-pen, and is on that account termed the Fiârheuer, I was reminded of the 'sheep-cotes' of the cave in the wilderness of Engedi. Close behind this cave

is another, called Saunghellir, or the 'singing cave,' not so much from any remarkable echo observable in it, as from the custom of a psalm being always sung by those who visit it." But the most remarkable and extensive Icelandic cavern is in the immense lava current which has streamed from the Bald Yökul, in which a large chasm occurs, formed by the falling in of the crust, laying bare the entrance to a cavity, forty feet in height, by fifty in breadth, which dimensions it retains for more than two-thirds of its length, ascertained by admeasurement to be 5034 feet.

"We now," says the writer just named, describing the spot, "lighted our torches, and entered the cavern, which was filled at this place to a considerable height with snow; beyond which we fell in with a rugged tract of large angular pieces of lava that had fallen from the vault, so that we were in constant danger of cutting ourselves, or falling into the holes of water that lay between them; nor were we without apprehensions lest fresh masses should have dislodged themselves from the roof, and crushed us to atoms. The darkness here became so great, that with all the light afforded us by two large torches, we were still prevented from

surveying so distinctly as we could have wished, the beautiful black volcanic stalactites with which the high and spacious vault was hung, or the sides of the cave, run into vitrified stripes, that appear to have been formed by the flowing of the stream of melted stones, while its exterior parts have been cooled by their exposure to the atmosphere. It was not long till we reached a spot, the grandeur of which amply rewarded all our toils; and would have done so, though we had travelled a hundred times the distance to see it. The roof and sides of the cave were decorated with the most superb icicles, crystallized in every possible form, many of which rivalled in minuteness the finest zeolites; while from the icy floor, rose pillars of the same substance, assuming all the curious and fantastic shapes imaginable, mocking the proudest specimens of art, and counterfeiting many well-known objects of animated nature. A more brilliant scene perhaps never presented itself to the human eye, nor was it easy to divest ourselves of the idea that we actually beheld one of the fairy scenes depicted in eastern fable." The name of this place, Surtshellir, alludes to one of the articles of the Scandinavian mythology. It recognises an end to the present system

of things, when Surtur, the black prince of Muspelsheim, or the region of fire, shall come from his dwelling-place, vanquish all the gods, and give up the universe a prey to the flames. The ancient Icelanders, observing this cavern in one of those fiery lava streams with which the island abounds, conceived it to be the present abode of Surtur, and called it after him, a superstition which still maintains some hold of the popular mind, as one of the servants of Dr. Henderson's party could not be induced by any persuasion to venture within its precincts.

Reference has been made in a former chapter to large unoccupied spaces underlying the surface, entirely unknown, till accidentally discovered in the process of mining, or indicated by subsidences of the superior formations. Similar vacancies must have been extensively created by the quantity of material transferred from the interior to the superficies by the ordinary play of volcanic forces. Etna disgorged 98,838,950 cubic feet of lava in the eruption of the year 1669. In 1737, Vesuvius gave forth a stream estimated to contain 33,507,058 cubit feet; and another in 1794, amounting to 46,098,766. But during the eruption of the Skaptar-Yökul, in Iceland, in 1783, two streams

were given out, one extending about fifty miles in length by twelve or fifteen at its greatest breadth, and the other forty miles in length by seven in breadth. The thickness in the plains was in some places ten feet, in others a hundred, while in narrow channels it amounted to 500 or 600 feet. Owing to the thickness, the lava took so long in cooling, that, a year afterwards, it was too hot to be crossed, and was sending up dense clouds of smoke or steam. These two currents have been subject to a calculation which gives for their solid contents nearly twenty thousand millions of cubic yards—the vastest outburst on record. "But this comprises only that portion which flowed into the inhabited district, whilst it is likely that an equal or greater quantity remained heaped up around the crater, or flowed off into the unknown regions of the interior. To this must also be added the pumice, sand, and ashes, scattered not only over the whole island, but to a distance of 300 miles round, in such abundance as to destroy the fisheries in the neighbouring sea. With these additions, it would amount, we may believe, to fifty or sixty thousand millions of cubic yards." This enormous discharge, if piled up, would produce a mountain of equal size to Hecla; or,

spread over the coal fields of Great Britain, it would cover them with a rock twenty feet thick.

The actual ejection of such immense quantities of matter, and the upliftings of the surface in the form of dome-shaped hills—an effect of volcanic action, of which the Monte Nuova near Naples, and Jorullo in Mexico, are modern examples—must occasion corresponding interior vacancies; and hence several sites, upon which vegetation blooms, and human habitations are thickly planted, there is reason to suppose, are but the domes of enormous vaults. The city of Quito is situated upon an elevated plain, from 8858 to 9515 feet above the level of the sea, surrounded by some of the most powerful volcanoes of the globe, among which the beautifully magnificent Cotopaxi towers, to a height of 2625 feet above what Vesuvius would be if piled upon the Peak of Teneriffe. From tremblings of the soil, subterraneous noises, and pendulum experiments, it has been inferred, that the Quito table-land is hollow at no great distance from the surface, and may be converted into a depression by the falling in of the ground upon the renewal of any great disturbance. The current events glanced at, with those of the

past, when the "mountains were brought forth" by upheaving secondary causes, sufficiently elucidate the torn, fissured, and cavernous aspect of the terrestrial superficies.

The singular fact of sounds, resembling the tones of an organ, has often been remarked by travellers, heard in solitary scenes, far apart from the dwellings of men. This mysterious music of nature may be explained by the structure of the surrounding rocks, having interior hollows communicating, by minute rents and apertures, with the external atmosphere. Humboldt passed the night on a granitic rock by the Orinoco, remarkable for emitting these tones about sunrise. He supposed them to proceed from the passage of rarefied air through the fissures, the impulse of the current against the elastic scales of mica, a component of the granite, which intercept the crevices, producing the peculiar organ-expression. M. Seetzen heard similar mountain-chords near Tor, in Arabia Petræa, arising, no doubt, from the same cause, which the natives, who are perfectly familiar with the circumstance, refer to a convent of monks miraculously preserved under ground. A tourist, in the autumn of 1828, traversing one of the wild and lonely passes of the Pyre-

nees, was saluted by "a dull, low, moaning Æolian sound," interrupting the deathly stillness of the place, and evidently proceeding from the Maladetta mountain, opposite the pass. No solution for the phenomenon appeared, except that the sun was then resting upon the mountain, the rarefied air ascending from it occasioning currents through the pores and fissures of the mighty mass, which made the melody in their passage. A terrible instance of internal sounds, to be somewhat differently accounted for, occurred in the year 1784, known as the subterraneous bellowings and thunderings (*bramidos y truenos subterraneos*) of Guanaxuata, a mining town in the high lands of Mexico. They commenced at midnight on the 9th of January, and continued more than a month, resembling heavy thunder-clouds discharging themselves under the feet of the inhabitants, sharp claps alternating with slowly rolling peals. The noise was confined to a limited circle round the town, from which the people fled in terror. It had never been heard before, and has not since been repeated. Humboldt remarks in explanation, and be it remembered, that Mexico presents many active volcanic vents, though the spot in question is

far remote from them:—"Thus do chasms in the interior of the earth open and close; and the sonorous waves either reach us, or are interrupted in their progress."

In contemplating the natural agencies just referred to, belonging to the deeply awful and occasionally destructive class, it is important to mark the consoling light in which they are presented to view by the sacred records. They are exhibited as implements in the hands of infinite Power, Wisdom, and Goodness, and not as independent energies acting without direction, and subservient to no control. In order more fully to fasten this truth upon the mind, a beautiful mode of representation is usually adopted in the Scriptures. There is a description of effects, omitting the instrumental machinery operating in their production, and recognising only the supreme First Cause, whose will is performed, whose pleasure is accomplished, and upon whom the entire economy of nature depends for the working and issue of its every process. Thus it is declared:—"He toucheth the hills, and they smoke"—"Which shaketh the earth out of her place, and the pillars thereof tremble"—"He divideth the sea with his power"—"The voice of the Lord is upon

the waters: . . . the Lord shaketh the wilderness of Kadesh." The intention of these, and kindred statements, which so sublimely express the physical agency of the Deity, is not more to excite and keep alive in the mind his reverent worship and fear, than to calm its natural apprehensions, and arm it with a felicitous confidence, in the presence of awful phenomena. In the hour when some great catastrophe of the material elements is transpiring, it is no mean advantage which the Bible-honouring peasant possesses over the undevout philosopher. He is able to recur to the composing thought, not only that the appalling energies exerted are the "ministers" of God, acting therefore in harmony with general principles of intelligent design; but in perfect keeping also with the spirit of a particular paternal government, the discipline of which, however occasionally "not joyous but grievous," points to a personal result of infinite beneficence. This promise of revealed religion has inspired in the minds of its appropriators, in modern as in ancient times, amid the wildest apparent war of nature's powers, a mental calmness "more precious than rubies" —"God is our refuge—therefore will not we fear, though the earth be removed, and though

the mountains be carried into the midst of the sea." At the same time, the formidable attributes developed in the working of the Creator's scheme, argue the desperate case of man striving with his Maker; and give an impressive urgency to the appeal made to him by the gospel of Christ—"Be ye reconciled to God."—"Who hath hardened himself against him, and hath prospered?"—"Thou, even thou, art to be feared: and who may stand in thy sight when once thou art angry?" Though the present life is passed in circumstances of external tranquillity—though in the course of man's current history, he never comes into contact with displays of the Divine omnipotence, but those that minister to his quietude, and are overlooked owing to being ordinary and common—there will come a period of terrestrial change, when the dead will be raised to witness its startling phenomena, and all human consciousness be compelled to recognise the mighty hand of God, with adoration or with terror. "The day of the Lord will come as a thief in the night; in the which the heavens shall pass away with a great noise, and the elements shall melt with fervent heat; the earth also, and the works that are therein, shall be burned up."

CHAPTER V.

GRAND EXAMPLES OF CAVERNS.

Paros—Antiparos—Tournefort—Grotto of Antiparos—Visit of the French ambassador—Cave of Adelsberg—Quicksilver mine at Idria—Lake of Zirknitz—Subterranean course of the Peuka—Adelsberg Cavern described—Animal inhabitants—Protei—Their habits—Cavern of the Maddelena—Sir Humphrey Davy—Cave of Cacahuamilpa—Mrs. Ashburnham—Madame Calderon—Description of the Salas—Discovery of a skeleton—Cavern del Guacharo—Humboldt and Bonpland—Equinoctial vegetation—Habits of the Guacharo—Indian superstition.

FOUR examples of what may be called cavern formations of the first class may be selected for notice, two from the Old, and two from the New World—the grotto of Antiparos, the cave of Adelsberg, the cave of Cacahuamilpa, and the cavern of the Guacharo.

1. Antiparos, in the Greek archipelago, near to Paros, as the name signifies, is one of the Cyclades, a group to the westward of that which contains the isle of the Apocalypse, the scene of John's banishment. The celebrated Parian Chronicle, containing a chronological account of the principal events in Greek history from

the earliest times to two centuries and a half before Christ, was found in Paros, on a block of marble, of which the whole island is composed. Antiparos, separated from it by a narrow, dangerous channel, is entirely of the same material, of small dimensions, and thinly inhabited, but often resorted to by travellers, on account of its great cavern, popularly called a grotto. The island, "despicable as it appears," says Tournefort, "has in it one of the greatest varieties that perhaps is in nature, and which proves one of the important truths of philosophy, to wit, the vegetation of stones" —his theory respecting the origin of stalactites. A rough cavern is the first object observed, about thirty paces broad, vaulted in a kind of arch, and inclosed with a court made by the shepherds. On some natural pillars about the entrance there are the remains of an ancient inscription, containing some proper names— Antipater among the rest, which local tradition supposes to be the names of the conspirators against Alexander the Great, who, after having failed in their design, are said to have here taken refuge.

Having entered the cavern, the passage proceeds without difficulty for about twenty yards,

at the end of which is a precipice, descended by means of ropes fastened to the projecting masses of rock. Another passage succeeds, ending in a descent, not so precipitous as the first. A third passage is then traversed, the walls of which, and the roof, are of glittering white and red marble, as smooth as if wrought by art; and after crossing a third precipice, a long sloping passage, the sides presenting snake-like petrifactions, leads to the fourth and last descent into the real grotto of Antiparos. This is called the "Great Hall," a spacious apartment one hundred and twenty yards long, one hundred and thirteen wide, and sixty feet high. The sides and roof are covered with immense incrustations of calcareous matter, beautifully white. Stalactites, ten or twelve feet long, depend from the ceiling, as thick as a man's waist, with a thousand festoons and leaves of the same substance occupying the intervening spaces. The floor is rough and uneven, owing to the formations of stalagmite upon it, some of which resemble broken columns, or the stumps of trees. One remarkably fine mass, termed the "Altar," is twenty feet in diameter, and twenty-four feet high. The memory of this cavern, known to the

ancient Greeks, seems to have been forgotten till the seventeenth century, when it was renewed by the marquis de Nointel, the ambassador of Louis XIV. to the Porte. He passed the three Christmas holidays in it, in 1673, on his journey to Constantinople, accompanied by a train of domestics, merchants, corsairs, and natives, who were curious to explore it. The place was illuminated by a hundred large wax torches, and four hundred lamps. The Capuchin chaplains of the ambassador celebrated high mass at midnight, the large block of stalagmite serving for the altar, after which it has been named, upon which an inscription, recording the ceremony, was carved by his order. It is not known whether the whole of this site has yet been explored.

2. The cave of Adelsberg is upon a more extensive scale, near the village of that name, in the province of Carniola, midway between Trieste and Lubiana. The province is occupied by a chain of limestone mountains, which present, within a short distance of each other, some of the greatest natural curiosities on the face of the globe. At Idria, where the limestone in the hills alternates with clay-slate, quicksilver is found in great abundance, partly

in a native state embedded in globules in the slate, but chiefly combined with sulphur and clay-earth. In one of the valleys, lies the singular lake of Zirknitz, which varies in size from four or five to seven or eight leagues in circumference, and sometimes entirely disappears, leaving its bed dry. This phenomenon is apparently due to the water retiring into a subterranean reservoir, through crevices in its bed, from whence it successively re-issues. The increase and diminution of the body of water at the lower level, through rain and drought, would cause the alternate appearance, enlargement, contraction, and failure of the lake, according to the character of the season. All the mountains and hills of the district abound with caverns and subterraneous passages, stretching in various directions, and lying in different places, which defy exploration, owing to rocky chasms or internal streams, but between which a mutual connexion seems to exist. Thus the river Peuka, a very considerable stream, enters the cave of Adelsberg, in the mazes of which it is apparently lost. The scene is strikingly impressive presented by this river, gracefully winding down the valley, then rushing towards the cavern, plunging

precipitately into a deep black cavity, abandoning the sunshine, and leaving the observer in utter ignorance of its future course, for it reappears not in the neighbourhood. But about twenty miles from Adelsberg, a river suddenly bursts from the ground, not an infant rill, but one of very ample volume and copious flow, which, though called the Timaro, is, in all probability, the imprisoned Peuka escaping from its bonds.

The cavern of Adelsberg was known in the middle ages. On the walls of a large gallery, discovered a few years ago, some names and inscriptions occur, dating from the year 1213 down to the beginning of the seventeenth century. By some natural convulsion, as the shock of an earthquake, the entrance was closed up, and it became inaccessible, and in this state it remained for a considerable period. Upon being re-opened, a lamentable spectacle told a tale of suffering and death. A perfectly entire skeleton was found, completely incrusted with stalactite, in an attitude contracted and agonized, with one arm clasped round a pillar, as if for support—that of some unfortunate being, entangled in the mazes of the place, his torch, perhaps, accidentally extinguished, who here

perished of hunger and exhaustion, after fruitless endeavours to find his way out of the dark and dismal abyss. To prevent such occurrences, access to the spot is now under control of the Austrian government. Starting from Trieste, the traveller stops at Prewald, to have his name registered as a visitor, and to pay a small gratuity towards keeping the path in the interior of the cavern in repair, where also a guide is furnished, no one being allowed to enter without, and one being usually allotted to every member of a party, both for assistance and security. The entrance is an aperture high up the side of a precipice, secured by a huge iron door. One of the best descriptions of the interior is from the pen of an American traveller.

"We advanced with ease through the windings of the cavern, which, at times, was so low as to oblige us to stoop, and at times so high that the roof was lost in the gloom. But everywhere the most wonderful varieties of stalactites and crystals met our admiring view. At one time, we saw the guides lighting up some distant gallery far above our heads, which had all the appearance of verandahs adorned with Gothic tracery. At another, we came

into what seemed the long-drawn aisles of a Gothic cathedral, brilliantly illuminated. The whimsical variety of forms surpasses all the powers of description. Here was a butcher's shop, which seemed to be hung with joints of meat; and there a throne, with a magnificent canopy. There, was the appearance of a statue with a bearded head, so perfect that you could have thought it the work of a sculptor; and further on, toward the end of our walk, the figure of a warrior with a helmet and coat of mail, and his arms crossed; of the illusion of which, with all my efforts, I could not possibly divest my mind.

"Two stalactites, descending close to each other, are called, in a German inscription over them, with sentimentality truly German, 'the union of two hearts.' The resemblance is certainly very striking. After passing the 'Hearts,' we came to the 'Ball Room.' It is customary for the inhabitants of Adelsberg, and the surrounding country, to come on Whit-Monday to this grotto, which is brilliantly illuminated; and the part called the ball-room is actually employed for that purpose by the peasantry. A gallery, very appositely formed by nature, serves the musicians for an orchestra; and

wooden chandeliers are suspended from the vaulted roof. It is impossible for me to describe minutely all the wonderful varieties; the 'Fountains,' seeming, as they fall, to be frozen into stone; the 'Graves,' with weeping willows waving over them; the 'Picture,' the 'Cannon,' the 'Confessional,' the 'Pulpit,' the 'Sausage-maker's shop,' and the 'Prisons.' I must not omit mentioning one part, which, though less grand than many others, is extremely curious. The stalactites have here formed themselves like folds of linen, and are so thin as to be transparent. Some are like shirt-ruffles, having a hem, and looking as if they were embroidered; and there is one called the 'Curtain,' which hangs exactly in natural folds, like a white and pendant sheet. Everywhere you hear the dripping as of a continual shower, showing that the mighty work is still going on, though the several stages of its progress are imperceptible. Our attention was so excited, that we had walked two hours without feeling the least fatigue, or being sensible of the passage of time. We had gone beyond the point where most travellers had stopped, and had been rewarded for it by seeing stalactites of undiminished whiteness, and crystals glitter-

ing, as the light shone upon them, like unnumbered diamonds."

The accessible part of this region, presenting such varied, wild, and beautiful workmanship, extends several miles in length, the pathway running at times close by the dark waters of the Peuka, and then mounting high above the stream where its roar becomes scarcely distinguishable. Apart from it, several pools occur, their calm and peaceful aspect offering a striking contrast to that of the river, impetuously rushing through its dark prison-house, as if impatient of the confinement. These small pools, buried in perpetual gloom, it is strange to find the abodes of life, yet they furnish a fitting home to the *proteus anguineus*, a creature entirely unknown till found in the caverns of Carniola, apparently confined to them—an instance, as sir Humphrey Davy remarks, of the wonderful manner in which life is produced and perpetuated, even in places which seem the least suited to organized existences, an animal to whom the presence of light is not essential, living indifferently in air and in water, on the surface of the rock, or in the depths of the mud. This singular creature was at first supposed to be the larva

of some large unknown animal inheriting the limestone cavities—a theory at once disproved on examination, which showed it to be an animal not in a transition state, but perfectly formed, of a peculiar species, undoubtedly a fish, but one of those fine links occurring in the chain of nature connecting different departments—in this instance connecting the tenants of the flood and of the field.

Protei, of an eel-like form, are from four to fourteen inches in length, and even larger. They feed on worms, small bivalves, and snails, but will subsist for years apparently without any aliment, naturalists having found it impossible to ascertain by experiments the length of time in which they can exist without food. Taken out of the water, and kept apart from it, the proteus dies, more or less quickly, as the season is more or less warm, being impatient of a high temperature. But preserved in water, and without any renewal of it, it lives long, rising at times to the surface to take in air by the mouth. The archduke John of Austria kept, in a subterranean grotto, prepared for the purpose, several of these animals, one of which lived eight years, and attained a size greater than ordinary. But the proteus

can dispense with air for a considerable and indefinite period, if supplied with an abundance of water. Professor Configliachi and Dr. Rusconi inclosed one in a box perforated with holes, which was then sunk in a large lake, and kept nearly four months beneath the surface, when the animal was found quite fresh and lively upon being drawn up. It evinces great agitation upon a sudden exposure to the light, is evidently distressed by it, and seeks the darkest part of the vessel in which it is confined. This disposition to escape from light is the more remarkable, as the eyes of the animal are incredibly small, and so buried beneath the skin, that even a person apprised of their situation, can with difficulty discern them.

Besides the cavern at Adelsberg, near to the village, the proteus is found and is more common in the cavern of Maddelena, a few miles distant, where it was first observed in the year 1797. It is in this last spot that the peasants at present go to fish for them, selling them to the curious who visit Carniola, or sending them to Trieste, where they are sold for two or three *lire* each. In the Consolations in Travel, by sir Humphrey Davy, a conversation is given as taking place in the cavern of

the Maddelena between two prolocutors, relative to the animal.

"*Eubathes.* I see three or four creatures, like a slender fish, moving on the mud below the water.

"*The unknown.* I see them: they are the protei: now I have them in my fishing-net, and now they are safe in the pitcher of water. At first view you might suppose this animal to be a lizard, but it has the motions of a fish. Its head and the lower part of its body and its tail bear a strong resemblance to those of the eel; but it has no fins, and its curious branchial organs are not like the gills of fishes; they form a singular vascular structure, as you see, almost like a crest, round the throat, which may be removed without occasioning the death of the animal, which is likewise furnished with lungs. With this double apparatus for supplying air to the blood, it can live either below or above the surface of the water. Its fore-feet resemble hands, but they have only three claws or fingers, and are too feeble to be of use in grasping or supporting the weight of the animal: the hinder feet have only two claws or toes, and in the larger specimens are found so imperfect as to be almost obliterated. It

has small points in place of eyes, as if to preserve the analogy of nature. It is of a fleshy whiteness and transparency in its natural state, but when exposed to light, its skin gradually becomes darker, and at last gains an olive tint. Its nasal organs appear large, and it is abundantly furnished with teeth, from which it may be concluded that it is an animal of prey; yet in its confined state, it has never been known to eat, and it has been kept alive for many years by occasionally changing the water in which it was placed.

"*Eubathes.* Is this the only place in Carniola where these animals are found?

"*The unknown.* They were first discovered here by the late baron Zois, but they have since been found, though rarely, at Sittich, about thirty miles distant, thrown up by water from a subterraneous cavity; and I have lately heard it reported that some individuals of the same species have been recognised in the calcareous strata in Sicily.

"*Eubathes.* This lake in which we have seen these animals is a very small one. Do you suppose they are bred here?

"*The unknown.* Certainly not. In dry seasons they are seldom found here, but after great

rains they are often abundant. I think it cannot be doubted that their natural residence is in an extensive deep subterranean lake, from which in great floods they are sometimes forced through the crevices of the rocks into this place where they are found; and it does not appear to me impossible, when the peculiar nature of the country, in which we are, is considered, that the same great cavity may furnish the individuals which have been found at Adelsberg and at Sittich. The same infinite Power and Wisdom which has fitted the camel and the ostrich for the deserts of Africa, the swallow that secretes its own nest for the caves of Java, the whale for the Polar seas, and the morse and white bear for the Arctic ice, has given the proteus to the deep and dark subterranean caves of Illyria."

3. In the new world, cavern formations exhibit still more gigantic proportions, as might be expected from the larger development of almost every form of inorganic matter, the rivers, lakes, cataracts, mountain-chains, valleys, plains, and volcanoes, being upon a vaster scale than in the eastern hemisphere. The cave of Cacahuamilpa, near the pretty village of that name, is in the *tierra caliente* of

Mexico, the hot region, which includes the country under an elevation of two thousand feet above the sea level, where sugar, cotton, indigo, and bananas flourish luxuriantly. It is supposed to have been formerly one of the scenes of those bloody religious rites to which the ancient inhabitants of the country were so addicted. If known to the early Spanish settlers, its memory sank into complete oblivion, as it has only been very recently visited by Europeans, the native Indians avoiding it from motives of superstition, conceiving it to be the abode of the evil spirit, identified with a mass of stalactite in its shining recesses, in the form of a goat with long beard and horns. Mrs. Ashburnham, the wife of the English resident, spent two days in examining the spot, sleeping at a neighbouring hacienda ; and Madame Calderon de la Barca, the lady of the Spanish ambassador, has made it the subject of one of her lively letters descriptive of Mexico.

The cavern penetrates a chain of bleak and naked mountains, rising up from a ravine refreshed by a rapid stream which forms small waterfalls as it tumbles over the rocks, and is bordered by green and flowering trees. The entrance is a superb portal, upwards of seventy

feet high, and a hundred and fifty wide, the rocks supporting the great arch on each side being so symmetrically disposed as to resemble a piece of regular architecture. Proceeding into the interior, the immense cavity is found to present a series of *salas*, or halls, of noble dimensions, connected by corridors and passages.

The first *sala*, two hundred feet long, a hundred and seventy wide, and a hundred and fifty high, as far as torch-light can show it, exhibits different colours of green and orange crystallizations on its walls, silvery stalactites hanging from the roof, and white calcareous forms, phantoms of palm-trees, pillars, pyramids, and porches, occupying the floor. Bats in great numbers inhabit this great entrance hall, and an exploring party who passed the night in it, not only heard the noise of the rattlesnake, but were startled by the appearance of a fierce leopard, whose loud roarings were echoed among the vaults, and who, after gazing at them by the light of the torches, stalked majestically back into the darkness.

The second *sala*, as lofty as the first, but nearly four hundred feet in length, presents an aspect decidedly Egyptian in the style of its incrustations, and transports the imagination to

one of the ancient temples on the Nile, with its obelisks at the porch, and strange idol objects of animal form in the interior. A gallery succeeds, supported by pillars adorned with vegetable-shaped calcareous formations, creeping plants, and rows of gigantic cauliflowers, each leaf delicately represented, and looking like a fitting food for some colossal occupiers of this subterranean palace. "We gave ourselves," remarks an observer, "up to admiration, as our torches flashed upon the masses of rock, upon the hills, crowned with pyramids, the congealed torrents that seem to belong to winter at the North Pole, and the Doric columns that bring us back to the pure skies of Greece. But among all these curious accidents produced by water, none is more exquisite than an amphitheatre, with regular benches, surmounted by a great organ, whose pipes, when struck, give forth a deep sound. It is really difficult not to believe that some gigantic race once amused themselves in these petrified solitudes, or that we have not invaded the sanctuary of some mysterious and superhuman beings."

This music is observed at Adelsberg. Upon any one of the pillars being struck with a stick, a strange metallic sound is emitted, but exceed-

ingly melodious. The same fact is remarkably conspicuous in Weyer's cave, in the state of Virginia, discovered by a hunter of that name in 1806. One of its chambers, called the Tambourine, or the Drum-room, contains beautiful congelations resembling curtains, beside which are large sonorous sheets sounding like the kettle-drum upon being struck. In another apartment, there is a sheet of stalactite extending along the wall, called the Tragical Sounding-board, remarkable for its sonorousness. A gentle stroke will produce a sound resembling distant thunder. Mr. Buckingham inspected a cavern in Tennessee, extending upwards of a mile in length, where, at one point, the organ arrangement of the stalactites was prominently displayed, both as to appearance and sound. The columns projected in full relief from the rocky wall, the central ones being the largest, the rest gradually diminishing on either side to the extremities. In addition to this general resemblance to the front of such an instrument, the pipes gave forth each a different sound when tried by the hammer, from the deepest tones of the bass by the largest pipes in the centre, to the shriller and shriller notes of the treble as the hammer went on

striking the successively smaller columns. The gigantic statue of Memnon, composed of syenita granite, emitted musical sounds as the first beams of the morning fell upon it. Various explanations have been given of the circumstance, but none more likely, than that which resolves it into a trick of the Egyptian priesthood, which the sonorous character of the stone favoured, a concealed stroke coincident with the sunrise calling forth the tones. Tried as it now sits in lonely grandeur, the statue responds to a blow with a peculiar sharp metallic sound.

The cave of Cacahuamilpa has not been explored to its termination, though traversed for several miles. It has been the scene of a tragedy like that at Adelsberg. A travelling party discovered here the skeleton of a man lying on its side, the head nearly covered with crystallization, some hapless individual who had fled from pursuit, or been led by rash curiosity to venture alone into the labyrinth, and perished. "I can imagine," says a narrator of the event, "the unfortunate man wandering amongst obelisks, and pyramids, and alabaster baths, and Grecian columns—amongst frozen torrents that could not assuage his thirst, and trees with marble fruit and foliage, and crystal vegetables

that mocked his hunger; and pale phantoms with long hair, and figures in shrouds, that could not relieve his distress—and then his cries for help, where the voice gives out an echo, as if all the pale dwellers in the cave answered in mockery—and then, his torch becoming extinguished, and he lying down exhausted and in despair, near some inhospitable marble porch, to die." The outline is forcibly drawn, and assuredly presents no exaggerated picture of the sad original. We rightly read the story of human disasters, when, amidst the thrilling interest which its page excites, the spirit of gratitude is awakened to a preserving Providence, that we have not fallen into those meshes of calamity, into which the footsteps of men in every region may be betrayed.

4. The great *Cueva*, or cavern *del Guacharo*, was first made known to the European world by Humboldt, who, together with his friend and companion Bonpland, examined it during their travels in South America. It lies in the district of Caraccas, pierced in the vertical profile of a rock, and is occupied by a stream which becomes a considerable river at no great distance from its mouth. The entrance, a vault eighty feet broad and seventy-two feet high, is

remarkable for the display of equinoctial vegetation in all its majesty. The rock above is covered with trees of gigantic growth. The *mammee* tree, and the *genipa*, with large and shining leaves, raise their branches vertically toward the sky. Those of the *erythrina* form a thick mass of verdure, while *oxalises* and *orchideæ*, of singular structure, occupy the driest clefts. Before the entrance of the cavern, creeping plants, interwoven in festoons, wave in the winds, showing a variety of the richest colours, the violet-blue of the *bignonia*, the purple of the *dolichos*, and the orange of the magnificent *oleandra*. The vigour of vegetable life at the equator appears in the adornment of the interior of the cave, large flower-bearing plants flourishing by the side of the stream, after it has become subterranean, and only ceasing where the day-light begins completely to fail. It is also remarkable for its uniform and regular construction. It preserves the same direction, the same breadth, and its primitive height, to the distance of 1458 feet, accurately measured. From this point, looking back towards the entrance, the scene is highly picturesque, resembling an immensely elongated aisle, fretted with stalactites, which display them-

selves on a back-ground of verdure, beyond the opening of the cavern. This is far, however, from being its whole extent, which appears never to have been fully explored, Indian superstition recoiling from the attempt to penetrate further, besides natural difficulties lying in the way.

The *guacharo*, of which this cavern is one of the chosen haunts, is a bird unknown apart from the mountains of Caraccas, about the size of a domestic fowl, of a dark bluish-grey plumage. Light is painful to it, and hence here the bird nestles in the day-time, issuing from its dark abode at night-fall in search of food, being one of the few examples that occur of a nocturnal bird, unlike our owls, feeding on fruits and seeds. Thousands of them, disturbed and frightened by the torches, when the cavern is visited, fill it with their wild cries, drowning every other noise, and add indescribably to the effect produced by the gloom of the place. Far in the interior, seeds carried by the guacharoes to feed their young, and accidentally dropped, have germinated in the mould which the stream has deposited upon the calcareous incrustations. These traces of organization amid darkness, consisting of pale blanched stalks, several feet in height, with half-formed leaves, are gazed

upon by the Indians with wonder and fear, as phantoms banished from the face of the earth. It is their common superstition, that the souls of their ancestors sojourn in the deep recesses of this cave; and hence to die and join their fathers, and to go to the guacharoes, are synonymous expressions. To them "life and immortality" have not been "brought to light by the gospel," after years of connexion with the Spanish padres in the neighbouring convent of Caripe, who exact from the native race a tribute of guacharo-oil to keep the church lamp trimmed. The conduct pursued towards their forefathers by the European conquerors—ostensibly the missionaries of the cross, but the veriest slaves of mammon—was little calculated to conciliate the native races towards that corrupted form of Christianity presented to their attention; and their thinned and miserable descendants, often smarting under the same injurious dealing, may well cling to the idea of finding a resting-place in the future, apart from the white man's presence. Alas! how incalculably has the truth been crippled in its influence, and injured in its fair fame, by the alien spirit and conduct of nominal adherents to it!

CHAPTER VI.

ICE, MEPHITIC, AND OSSEOUS CAVERNS.

Accident to the emperor Tiberius—Summer-produced ice-caves —At Szelitze in Hungary—In Russia—Sir R. T. Murchison—Ice caves in France—Explanation—Mephitic caverns—Grotto del Cane—Carbonic acid gas—Accidents—Crater at Neyruc—Dunsthole near Pyrmont—Poisoned valley of Java—Darwin—Foersch—False statements of the Upas—Account of the tree—Account of the valley—Osseous caves—Wirksworth—Kirkdale—Hyæna den—German bone caves—Bauman's Höhle—Zahnloch—Gailenreuth—Kühloch—Estimate by Dr. Buckland—Inferences—Moral lessons.

Tacitus relates of the Roman emperor Tiberius, that, retiring to one of his country seats, called the Caverns, (*Speluncæ*,) near Fundi, and contiguous to some natural cavities after which it was named, he was dining in one of them, for the sake of the coolness it afforded, when an accident occurred, which had well-nigh proved fatal to him. The roof suddenly gave way, and buried several of his attendants beneath its ruins, when Sejanus threw himself over the emperor to protect him with his own body, and was found in that position by the soldiers who came to his relief. The wealthy Romans were

thus accustomed to plant their villas in the neighbourhood of some "cool grot," common in the volcanic country of south-western Italy, holding their banquets in the delicious shade, during the summer season, when the heat, natural to the climate, is frequently increased by the hot breath of the *sirocco*. In general, the temperature of caverns is lower than the mean temperature of the surrounding atmosphere, —cooler, therefore, in summer, and warmer in winter. It shows little diversity, also, through the year, where the roofs are thick, and the openings narrow, so as to have but a very limited communication with the external air. In others, however, differently constructed, great changes of temperature occur, and several exhibit the apparently anomalous circumstance of being actual ice-houses during the prevalence of summer heat, and agreeably warm during the reign of winter's cold.

An instance of one of these summer-produced ice-caves, occurs near the village of Szelitze, in Upper Hungary. The neighbouring country is hilly, occupied by the limestone of the Carpathian mountains. It abounds with woods, and the air is sharp and cold. The entrance of the cavern, which faces the north, is eighteen

fathoms high, and eight broad; consequently, ample enough to receive a large supply of the external air, which here generally blows with great violence. Subterraneous passages stretch away from it southward, to a greater distance than has yet been penetrated. In the midst of winter, the air in this cavern is warm, but in summer, when the heat of the sun without is scarcely supportable, the cold within is not only very piercing, but so intense, that the roof is covered with icicles of great size, which, spreading into ramifications, form very grotesque figures. When the snow melts in spring, the inside of the cave, where its surface roof is exposed to the sun, emits a pellucid water, which immediately congeals as it drops, and thus forms the icicles mentioned, and the water that drops from them on the sandy floor, freezes in an instant. It is even observed, that the greater the heat is without, the more severe is the cold within, so that in the dog-days, all parts of this cavern are covered with ice, which the inhabitants of Szelitze use for cooling their liquors. The quantity of ice thus formed is sometimes so great, that it has been estimated at as much as six hundred waggons would be able to remove in a week. In autumn, when the heat

of the day begins to abate, and the nights grow cold, the ice begins to dissolve, and is quite cleared away by the arrival of Christmas, when the cavern is perfectly dry, has an agreeable temperature, and is the haunt of swarms of flies, gnats, bats, owls, hares, and foxes; resorting to it as a winter retreat, till the spring returns.

When travelling in Russia, sir Roderick Murchison met with a cavern of a similar description, near the imperial salt-works, at Iletski, on the south of the Ural mountains, where a series of natural hollows occur in a mass of gypsum, which the peasantry employ as storehouses. It was then summer, and the weather was exceedingly hot, but, at a short distance within the door, and on a level with the village street, beer and quash were found half frozen. Further on, solid undripping ice hung from the roof and sides, and the floor was a mass of hard snow, ice, or frozen earth. But, during the winter-part of the year, when the weather is more rigorous, and the entire country without is frost-bound, this cavern, of which there are several similar to it in the district, is not only free from ice, but has so mild a temperature, that the Russian peasants affirm, they should not mind sleeping in it without their sheep-

skins. "Standing on the heated ground," sir Roderick remarks, "and under a broiling sun, I shall never forget my astonishment, when the man to whom the cavern belonged unlocked a frail door, and a volume of air, so piercingly keen, struck the legs and feet, that we were glad to rush into the cold bath in front of us, to equalize the effect."

At the distance of about five leagues from Besançon, in France, there is another example of a grotto, containing ice in summer, a foot and-a-half thick on the floor, and festoons of icicles around the opening inside, which melt away as the winter approaches. This singular phenomenon here noticed, is susceptible of a very satisfactory explanation. It depends on the relation which subsists between the moisture in these caverns and the external air. In summer, when it is hot and dry outside, evaporation takes place. By this means, a considerable degrēe of warmth is withdrawn from the inclosed air, the vapours making their escape through the openings, and through fissures in the roofs. As the exterior temperature increases, the more rigorously the evaporation is carried on, producing a degree of cold in the interior, which may sink beneath

the freezing point, just as in the greatest heat, we can most readily freeze water, if we surround it with ether. In winter, on the contrary, the more the warmth and dryness of the external air are diminished, the less will be its capability to promote evaporation in the cavern. The warmth contained in the air will no longer be extracted, and the ice which has been produced must melt. For the summer cooling in these caverns, however, to sink below the freezing point, there must be a certain relation, which but rarely subsists, between the openings and the evaporating surface of the interior. If the opening be too large, too much warm air is introduced, and the temperature of the interior is thereby much more increased than it can be diminished by evaporation. If it be too small, the vapours cannot withdraw themselves fast enough, and the evaporation is lessened, because the surrounding air is saturated with moisture. The ice-caverns, therefore, are comparatively rare; but, in addition to those named, there is a cave at Vesoul, in France, where a stream flowing through it is frozen over in summer, and clear of ice in winter.

Mephitic caverns are remarkable for the

development of noxious gases, which are fatal to animal life, unless quickly removed from their influence. In some, dangerous and inflammable vapours proceed from the decomposition of the rocks of which they are composed, as in those of gypsum, in which fœtid limestone occurs in wavy stripes, or thick beds, which gives out carburetted hydrogen, the *fire damp* of our mines, which, when mixed with air, and exposed to flame, occasions dreadful and destructive explosions. In others, the gases are generated in the interior of the earth, and ascend through cracks and fissures, chiefly the carbonic and sulphuric acids, a common production in sites of volcanic activity; or, where volcanic action, far below the surface, may be supposed. The best known cave of this description, is the Grotto del Cane, in the neighbourhood of Naples, near the Lago d'Agnano, the bed of which is the crater of an extinct volcano. This is a small natural grot, about ten feet long, four feet broad, and nine feet high, in which carbonic gas collects itself. This is a colourless, transparent, and therefore invisible vapour, the *choke-damp* of the mines, detected by the properties of extinguishing flame—destroying animal life—reddening litmus paper

till the acid volatilizes—and giving a precipitate with lime-water, the carbonate of lime.

The Grotto del Cane may be entered by man with perfect impunity, because the carbonic acid gas, being heavier than common air, lies in a stratum upon the floor, scarcely eight inches thick; but low animals, venturing within its precincts, come into contact with it, and are suffocated, unless speedily taken out. The cave derives its name from the dogs upon which experiments are tried, to gratify the curious stranger—a needless and cruel exhibition, the animals being drawn out with a cord, half dead, and thrown into the Lake d'Agnano to recover themselves. This gas, though in small quantity, enters into the composition of the atmosphere, usually forming not above one two-thousandth part of a volume of air; but it may be present in atmospheric air, in the proportion of one-twentieth of its volume, and be respired without being injurious. In a state of concentration, its effect upon the human system is to stimulate the glottis to contraction, so that it cannot pass the wind-pipe, and death by suffocation ensues. When unconcentrated, so as to be capable of being inhaled, yet not sufficiently diluted with atmospheric or other respirable air, stupor is

produced, and the symptoms of apoplexy. Carbonic acid gas is abundantly evolved from the combustion of charcoal, from the coloured parts of the flowers of plants both by day and night, and from the green parts of plants during the night. Hence the danger arising from sleeping in an apartment with plants, or with a charcoal fire, without sufficient ventilation to carry off the noxious elements, a practice which has often led to fatal casualties. Owing to its great specific gravity, it mixes slowly with the air, and often remains long at the bottom of old wells, where it has been generated, rendering great caution necessary on the part of persons descending into them. An instant removal into the pure fresh air, and the dashing of cold water upon the face, should be adopted in case an accident occurs, with ammonia rubbed on the chest, and a moderate loss of blood.

There can be no doubt that the carbonic acid gas in the dog grotto, near Naples, is elaborated by the interior chemical processes going on in that volcanic region. The spot and its qualities were known to the ancients. The elder Pliny refers to it as one of "Charon's ditches;" and, probably, the deleterious vapour was more extensively evolved in his time, than

at present, as he speaks of its having been fatal to human life, which cannot be the case now, unless a person should throw himself prostrate on the floor of the cave. Other writers, also, mention the waters near the banks of the Lake d'Agnano, being in a state of constant ebullition, owing to the disengagement of the gaseous element—a phenomenon which has ceased—and which sanctions the idea of the chemical action in this locality having moderated in intensity. In the crater of the extinct volcano of Neyruc, in the south of France, on the banks of the Ardêche, the soil is one vast sieve for the ascent of carbonic acid gas, which has a sensible effect upon the people employed in its cultivation, and is injurious to the vegetation. The Dunsthole, near Pyrmont, is also a mephitic cavern; but the most remarkable spot is the poisoned valley of Java. Darwin, in the Botanic Garden, gives a description of this site, assigning the cause of its dreariness to the upas tree, the false but popular notion of his time. He drew his materials from an account translated from the Dutch of N. P. Foersch, a surgeon at Batavia, in the year 1774, in the service of the Dutch East India Company. The account states:—"The upas is situated in

the island of Java, about twenty-seven leagues from Batavia. It is surrounded on all sides, by a circle of high hills and mountains ; and the country around it, to the distance of ten or twelve miles from the tree, is entirely barren. Not a tree, nor a shrub, nor even the least plant or grass is to be seen. I have made the tour all round this dangerous spot, at about eighteen miles distant from the centre, and I found the aspect of the country, on all sides, equally dreary." Foersch then adverts to the mode of dealing with malefactors sentenced to die, allowing them the chance of going to the upas, and returning with some of its poison, an exudation from the tree, an experiment fatal to the great majority ; and proceeds to relate :— "This, however, is certain, that, from fifteen to eighteen miles round this tree, not only no human creature can exist, but in that space or ground, no living animal of any kind has ever been discovered. I have also been assured, by several persons of veracity, that there are no fish in its waters, nor has any rat, mouse, or any other vermin been seen there ; and when any birds fly so near this tree that the effluvia reaches them, they fall a sacrifice to the effects of the poison. This circumstance has been

ascertained by different delinquents, who, on their return, have seen the birds drop down, and have picked them up dead."

This account, which deceived all Europe for a time, is now a monument of the relator's want of conscientiousness, reflecting disgrace upon his name. There is a tree called the upas, a species of the *genus antiares*, but instead of being the solitary inhabitant of a desert caused by its pestiferous qualities, it grows abundantly in Java, delighting in a fertile soil, and is found surrounded on all hands with shrubs and plants, in the heart of the thickest forests. The tree is, however, poisonous, but instead of being fatal to animal life by its exhalations, man and beast may repose in its shade with perfect safety, and the birds nestle on its branches ; the poison lying in the juice that flows from the stem when punctured, and only becoming fatal when mixed with the blood. There is too, a tract of land answering to a region of the "valley of the shadow of death," but the upas can no more exist in it than any example of vegetable or of animal life. The tract in question is a small valley, completely surrounded by a steep embankment, like the crater of an extinct volcano, constantly evolving from a subterranean

source carbonic acid gas. Consequently neither animals nor vegetables can live there, for though the quantity of it in the atmosphere is essential to the respiration and life of plants, any considerable augmentation of that quantity is deleterious and destructive.

Osseous, zoolithic, or bone-caverns, are those in which the remains of animals have been discovered, mostly of extinct species, none of the congeners of which, in several instances, now inhabit the countries where these relics are found—facts which open up some interesting passages respecting their former condition. Such discoveries are by no means modern, though they attracted no general attention until a very recent period. The following rude record of a miner of the Peak, states the finding remains of the elephant in a cavity of the mountain limestone, nearly two centuries ago: "In sinking for lead at Baulee, within two miles of Wirksworth, A.D. 1663, they came to an open place as large as a church, and found a skeleton reclining against the side, so large, that his brain-pan would have held two strikes of corn, and so big, that they could not get it up without breaking it. My grandfather having a share in the said mine, they sent him a tooth

weighing four pounds three ounces—George Mower." Subsequently, in the Dream cavern, near the same spot, almost the entire skeleton of a rhinoceros was met with, enveloped in mud and pebbles, with bones of deer, and fragments of the horns. The animal remains are commonly buried in mud, or covered with calcareous deposits. They are those of young and old individuals. Some are entire; others broken, as if by falling into a pit; others appear worn as if by currents of water; and many show teeth-marks, as if gnawed by ravenous beasts.

Kirkdale, a village near to Kirkby-Moorside, in the vale of Pickering, in Yorkshire, has acquired a more than European celebrity, from its osseous cave, which led to the publication of Dr. Buckland's "Reliquiæ Diluvianæ." Formerly, its most ancient monument was its church, bearing a Saxon inscription, of the date of Edward the Confessor, accompanying the rude representation of a sun-dial: but the memorials of an antediluvian age have been discovered here. It was in 1821 that some workmen, employed on the road near the church, accidentally opened the mouth of a cavern in the oolitic limestone, which had long been choked

and concealed by collections of rubbish, overgrown with grass and rushes. The interior, upon being explored, presented a nearly level floor, extending two hundred and fifty feet in length, the space varying in breadth and in height, in some parts being so low as not to allow an individual to stand erect. The roof and sides were covered with stalactites, and a general sheet of sparry stalagmite lay upon the floor, over a bed of yellowish loamy mud. It was chiefly in this mud that the remarkable fact was observed, of the bones of animals sticking through it, "like the legs of pigeons through a pie-crust." The remains belonged to the following classes :—

Carnivora	Hyæna, felis, bear, wolf, fox, weasel.
Pachydermata . .	Elephant, rhinoceros, hippopotamus, horse.
Ruminantia . . .	Ox, three species of cervus.
Rodentia	Hare, rabbit, water-rat, mouse.
Birds . . : . .	Raven, pigeon, lark, duck, snipe.

The remains of hyænas were very abundant, belonging to between two and three hundred individuals, young and old, as their teeth were found in every stage, from the milk-tooth of the young animal to the old worn stump. Their peculiar excrement (*album græcum*) was also common. Almost all the bones were indented, as if by the canine teeth of carnivorous beasts, the marks resembling those made by the living

hyæna of the Cape. From the whole evidence it was inferred—and the conclusion has been generally acquiesced in—that the Kirkdale cave was the den of successive races of hyænas, who, in conformity with the habits of those predaceous beasts at present, dragged into it the bodies of the other animals to prey upon them; and that the hyænas themselves, as they died, or were killed by their younger and stronger compeers, were preyed upon in like manner. It may be observed, in view of an objection, that the elephantine remains were those of young animals, and that those of the hippopotamus and rhinoceros were scarce. Another inference is, that some great catastrophe finally brought destruction upon the race, since which time other species of animals alone have inhabited the country. That catastrophe has left a memorial of its diluvian nature in the bed of mud in which the bones were found indiscriminately blended; and it may be concluded to have been gradual in its approach, affording opportunity to the existing living animals to escape from their den, to perish in other situations, since no entire skeleton of the hyæna was discovered in the cave.

In Kent's Cavern, situated in a limestone

rock, about a mile from Torquay, in Devonshire, fossil-bones of the same species of animals have been found, and similarly buried in a deposit of mud, overlaid with a crust or flooring of stalagmite formation, showing the diluvian catastrophe to have been no local flood. This cave, upwards of six hundred feet long, variously contracting and expanding, appears to have been occupied, not remotely, by man, from relics of human labour found in it—perhaps a retreat of robbers.

Osseous clefts, fissures, and caverns, occur in much greater numbers in Germany than in England, and they are also of more importance. They present the same general phenomena, a mass of diluvian rubble upon the floor, containing animal remains belonging to species no living examples of which now inhabit those countries. The most common relics are those of the bear, in connexion with which there are only the remains of a few other animals found, which appear to have served for food, the bear feeding chiefly upon vegetables, and being only occasionally carnivorous. Bauman's Höhle, in the district of Blankenburg, belonging to the duchy of Brunswick, is a zoolithic cavern, called after the name of a miner, who, in 1670,

ventured into it alone, to search for ore, lost his way, wandered about for three days and nights in solitude and darkness, and at length found the entrance, only to die of utter exhaustion from hunger and fatigue, upon extricating himself.

In Franconia, near the city of Muggendorf, the most remarkable of the bear-caverns are found, both as it respects size and the quantity of organic remains. One, called Zahnloch or the "Hole Teeth," known from an early period, derives its name from the abundance of fossil-teeth taken from it. In the middle of a contiguous cavern, there is a large insulated block of stone, with a perfect polish upon its surface, as if from the climbing and gambols of the bears upon it, according to their present natural habits. Another cave, at Gailenreuth, exhibits the same breccia of bones with diluvial loam and pebbles; but the most extensive mass is in the cave of Kühloch, which resembles in size and proportions, the interior of a large church, and contains upon its floor, covering it to the depth of six feet, hundreds of cart-loads of black animal dust, mingled with teeth, principally proceeding from mouldering bones. Dr. Buckland has estimated this amount of animal matter to be equal to at least two thou-

sand five hundred individuals of the cavern-bear. Allowing a mortality of two and a half per annum, it follows, that they must have resorted to this spot for a thousand years, retiring here on feeling the approach of death, to end existence in solitude, as is the well-known habit of many animals, till the catastrophe of a common destruction arrived.

Conclusions of great interest and importance have been drawn from the circumstances noticed. That the animals whose remains are found in the osseous caves—elephants, rhinoceroses, hyænas, and hippopotami—once inhabited the northern regions of the globe, and perished there by a great diluvial catastrophe, seem to be indisputable facts; and as the living species of these genera are almost exclusively confined to tropical latitudes, it is a reasonable presumption, that a much higher temperature prevailed in the northern zone than at present, when they occupied its wilds. The consequent change of climate, unknown as to its mediate causes, there can be no difficulty in admitting, "knowing the Scriptures and the power of God," who "changeth the times and the seasons," and who was pleased, in dealing with the human survivors of a great material revolution,

to take cognizance by covenant of "cold and heat," in order to give assurance respecting the permanence of nature's general arrangements, till the scheme of providence concerning their posterity shall be complete. To make a high temperature intertropical, reducing that of the northern regions involves only an effect parallel to that of which the diluvium of the caves, and similar diluvium scattered upon the face of the continents, is demonstrative, the submersion of high-lying fields and hills heneath the water-floods.

But it is of more importance to remark the moral relations of the catastrophe, and of the remains of organic life which are its extant monuments. Our Lord affirmed to his disciples, of the fowls of the air, that "one of them shall not fall to the ground without your Father;" and expressly, in reading the Scripture narrative of that great physical event, which involved in destruction the animal and human races, excepting a remnant, we are commanded to "behold the works of the Lord, what desolations He hath wrought in the earth." Amid the mystery, too, that hangs over that tremendous dispensation, there are clearly revealed points to which it behoves the living to take heed—

its moral cause, the delinquency of mankind—its moral end, the warning of the preserved, and their successors, through all ages of time, against an irreligious career. In the same manner now, those natural convulsions which are occasionally fatal to life upon an extensive scale, have impressive moral associations. The "secret of the Lord" is not fully with us in relation to them; but, while abjuring that presumption of self-complacency, which would interpret them to the disadvantage of the sufferers in contrast with the spared, of this we may be assured, that they are acts of the universal government of God, the instruments of his righteousness, admonitory to mankind of their entire dependence and consequent obligations, intended to fix in the human breast the idea of responsibility, and confirm the sentiment of Scripture, that personal and public godliness are the only guarantees of individual happiness and social stability. The origin and intent of natural phenomena, with the duty of man in relation to them, are finely expressed in the words of Scripture:—

"He causeth them to come, whether for correction, or for his land, or for mercy.
Hearken unto this, O Job, stand still, and consider the wondrous works of God."

CHAPTER VII.

CAVE-DWELLERS.

Mankind classified by habitations—Supposed cave stronghold of Cain—Primitive dwellings—Troglodytæ—Arab phrase—Book of Job—Voyage of Hanno—African troglodytæ—Referred to by Herodotus—Aristotle's description—Fountain of the sun—Lucretius—Ovid—Wilkinson—Pliny—Strabo—Silver age of Ovid—Cimmerians—Homer—Valley of Ipsaca—Described by Denon—Asiatic troglodytæ—Bameean in Afghanistan—Greek mythology—Oracle of Trophonius—Cave—Rites from Pausanias—Sibyls—Cave of Cumæan sibyl—Its site—Heathen and Scripture oracles.

However repugnant to our ideas of social comfort, to have a local habitation in the naked clefts of the rock, in hot climates, and among tribes unaccustomed to the conveniences of civilized life, such sites have often been selected as places both of temporary and permanent abode, affording a welcome retreat from the alternate plagues of the solar rays and the drenching rains. Mankind may be divided into four classes, according to four different kinds of habitations.—1. Cave-dwellers, occupying natural or artificial excavations in the rocks and mountains, or underground hollows.

—2. Tent-dwellers, readily pitching, taking down, and carrying their structures adapted to nomadic pastoral tribes.—3. Hut-dwellers, constructing their erections of the materials common to their respective localities; snow, earth, branches of trees, stones, or some other substance, in its natural state or coarsely wrought. —4. House-dwellers, among whom the hut is brought to perfection in the palace, the colonnades of which are superb imitations of the cross-beams that support the cottager's thatched roof. But there is one section of the human race omitted in this enumeration—a very small one—the tree-dwellers. On the great plains of South America, along the course of the Orinoco, which are subject to the floods of the river, and converted into vast swamps, the traveller is often surprised by seeing the tops of the magnificent palm-trees lighted with fires. The Guanacas, a people who have remained for ages in these marshy districts, secure themselves from the waters by living in the palms, where, with mats, coated with clay, they construct hearths on which to kindle the fires essential to their comfort.

In our authorized version of the Scriptures, we read, that Cain "builded a city, and called the name of the city, after the name of his son,

Enoch,"* or Chanoch. But some distinguished Hebrew archæologists, deriving the word translated *city*, from a root signifying *to be deep, to lie deep*, imagine a *cave* to be intended, upon which the fugitive seized, and intrenched himself as in a stronghold. It is argued, that it is difficult to see how a city, in the ordinary sense of the term, or any semblance of it, could be erected previous to the discovery of metallurgy, and its kindred arts, which did not take place till the days of Tubal-Cain. It is, moreover, alleged, that the paternal brother of the latter, or Jabal, being "the father of such as dwell in tents," the supposition of a sojourn in tents following the existence of cities, involves a retrograde movement in civilisation and social refinement. Such reasons have led to the idea stated, that Cain's erection was only the strengthening of a rocky fastness, in which he planted himself and family, in order to be secure from the dreaded vengeance of his contemporaries. However this may be, it is certain that caves were among the primal abodes of the human race, and have continued to the modern era to be inhabited by tribes of men, such tribes being called, in the writings of the an-

* Genesis iv. 17.

cients, troglodytæ, a Greek compound, derived from τρωγδλη, a cave, and δυμι, to enter. "Companions of the rock," is the Arab phrase for the occupiers of such sites, which recalls the phraseology of the sacred page: "Let the inhabitants of the rock sing."* Job, yielding temporarily to exasperation, thus refers to the ancestry of his accusing friends :—

"Whose fathers I scorned to rank with the dogs of my flock—
Who were yesterday gnawers of the desert,
Of the waste and the wilderness;
Plucking nettles from the bushes,
Or furze-roots for their food.
They were cast out from the people,
They slunk away from them like a thief,
To dwell in the fearfulness of the steeps,
In dens of the earth, and in caverns."†

The latter clause is rendered in our version: "to dwell in the cliffs of the valleys, in caves (*Heb.* holes) of the earth, and in the rocks."

The first notice of troglodytæ is in the Periplus (*voyage*) of Hanno, an account of the earliest voyage of discovery extant. Hanno, the Carthaginian admiral, with a fleet of sixty large vessels, was despatched by the senate to the western coasts of Africa for the purpose of founding colonies. A narrative of this expedition, commencing from the time that the pillars of Hercules, or the straits of Gibraltar, were cleared, was hung up in the temple of Saturn

* Isa. xlii. 11. † Job xxx. 1—7.

at Carthage, an official document, apparently the journal of the commander, or one of his companions, to which the date of the sixth century before the Christian era has been assigned. We do not possess a copy of the original, but a translation made by a Greek of a later age, yet it is impossible to read it without being convinced both of the genuineness of the relation, and the reality of the voyage, as attested by the simplicity of the document, and that faithful description of localities and manners, which no one but an observer could have given. The representations of the great rivers filled with crocodiles and hippopotami, the fragrance of the woods, the wild negroes, the stillness by day, the nocturnal fires, the merriment of the natives in the cool of night, their gesticulations and shrill cries, impress themselves upon the mind as true pictures of scenery and life on the north-west African coast, about the mouth of the Senegal, from their accordance with modern knowledge. After passing the Lixitæ—wandering shepherd tribes, inhabiting the banks of the great river Lixus, supposed to be the Rio d'Ouro, with whom the Carthaginians came to a friendly arrangement—the voyagers reached inhospitable tribes of savages, occupying a hilly

country overrun with wild beasts, among whom, "in the neighbourhood of the mountains, lived the Troglodytæ, men of different appearance, whom the Lixitæ described as swifter in running than horses." The change of aspect noticed, probably marks the transition from the bronze of the Moresco to the black of the negro races.

Pliny, in a chapter on the rise of the arts, speaks of the houses of Greek civilisation being antedated by holes and caves within the ground; and in the advance of society from a state of barbarism, the conversion of the solid rock into a series of habitations by artificial excavation, would be the next step after the occupancy of natural hollows, rendered imperative by the growth of population, and invited in particular situations by considerations of climate and defence. The deep rocky valley of Ipsaca, on the southern coast of Sicily, to the west of Cape Passaro, is one of the most remarkable monuments extant of the troglodytic habits of the ancients.

This valley, as described by Denon, has on one side a wall of perpendicular rock, which presents a prodigious number of small excavated chambers, arranged over each other in several

stories, of ten or twelve feet each, the opposite side exhibiting the same appearance, but to a less extent. There are as many doors as chambers, all of the same size and workmanship, almost all of the same form, and evidently designed for the same purpose. Each chamber forms a square with obtuse angles, eighteen feet long by six wide, and as many in height. Each, on the left of the door, has a kind of hole or bason cut out of the rock, with an external aperture, apparently intended to let the refuse water escape from the interior; and there is another aperture opening breast high, for the admission of air and light upon the door being closed. The side walls are perforated with holes, as if for pegs to be inserted in them, supporting utensils, or planks forming shelves. The chambers have in general no communication, consequently those of the upper stories could only be reached and left by the inhabitants by means of ropes and ladders.

The valley of Ipsaca was examined by Denon for the length of three miles, and through this distance he constantly found the same excavations, in the same order, and similarly circumstanced, obviously, therefore, once the seat of a numerous population. In some instances, he

observed a second chamber behind the first; and occasionally the upper chambers communicated with the lower by round apertures, where, doubtless, temporary ladders were placed, serving instead of staircases. The dwellings had plainly been constructed by a very rustic people, for not a straight line appeared, nor a right angle, nor an arched roof, nor a smooth surface. One excavation, called the castle, consists of several apartments in each story, and the upper and lower stories communicate, supposed to have been the residence of the chiefs of the tribe occupying the valley. The origin of this curious troglodytic city, now the abode of a few peasants, is involved in profound obscurity. It has neither name nor notice in history, but it may be reasonably presumed to have been formed by the earliest inhabitants of the island, who abandoned it previous to the foundation of Rome, upon the arrival of Greek and Carthaginian colonies to the coast, retired into the interior country, and left the place to solitude and mystery.

In western and central Asia, in various places, the construction of cave-dwellings has not yet been abandoned. Through a great part of Armenia and Georgia, as Mr. Morier

relates, the houses answer in description to those mentioned by Xenophon, as being there in his day. "The inhabitants make a considerable excavation, which, according to the nature of the ground, gives them one, two, or three sides for their house, and then build up the remainder with huge stones, like Cyclopean walls. Upon this they lay very thick rafters, and then cover the whole with earth in so solid a manner, that it is difficult to say if you are walking upon a house-top, or upon the bare ground. They only leave one aperture at the top, which lights the room inhabited by the family." But the most extraordinary troglodytic site extant, and still partially occupied, is in the valley of Bameean, in Afghanistan, first made known by the lamented sir Alexander Burnes, in his Travels into Bokhara.

Bameean, supposed to represent the city founded by Alexander at the base of Paropamisus before entering Bactria, lies in a valley or dell. The hills on each side consist of a conglomerate, composed of indurated clay and pebbles, which renders their excavation a work of easy performance. For about eight miles innumerable caves have been scooped out, in which the great part of the population still

reside. A detached hill in the middle of the valley is quite honeycombed by them, and is called the city of Ghoolghoola, consisting of a series of caves, one above another, which are said to have been constructed by a king named Julal. The deserted caves, partially choked up by accumulations of rubbish, are frequently dug into by labourers employed for the purpose, who find rings, coins, and other relics of their former occupants, which generally bear Cufic inscriptions, and are of a later date than the age of Mohammed. The mass of these cave-houses have no pretensions to architectural ornament, being no more than squared holes in the hills. Some of them are finished in the shape of a dome, and have a carved frieze below the point from which the cupola springs. The inhabitants, says Burnes, tell many remarkable tales of the caves of Bameean; one in particular —that a mother had lost her child among them, and recovered it after the lapse of twelve years. The tale, he remarks, need not be believed; but it will convey some idea of the extent of the works.

But, besides serving the purpose of ordinary human dwellings, it was in caves and grots, natural or artificial, that the shrines of several

of the hero-gods of antiquity were established, an artifice of the priests, adopted in order that the general wildness of such sites might impress with awe the minds of votaries, and impose human sounds upon the ear for Divine oracles. In one of the dells of Mount Helicon, the river Hercyna rises from two sources, called by Pausanias the waters of oblivion and recollection, Lethe and Mnemosyne. The united waters pass through a ravine, savage and gloomy, on their way to Lebedea. The rocks, bare and rugged, rise in fearful precipices to a great height; the silence of the place is only interrupted by the roaring of the stream dashing through it; groves interspersed along the bottom add by their dark foliage to the impressiveness of the spot; and render it a scene calculated to give effect to the rites of a mysterious and awful mythology. Here was the oracle of Trophonius, the mythic Bœotian hero;—a cave —the floor of which was sunk considerably below the level of the entrance, and consequently dark. The entrance had no steps, and the person who wished to consult the oracle, provided himself with a ladder for the descent. But a rigid discipline was gone through before access was granted, of a nature adapted to pre-

pare the mind to receive, as supernatural, the strange sights and sounds of the place.

The Sibyls—a class of reputed prophetic women, belonging to the mythical ages of ancient history—are represented, in some instances, as inhabiting caves, in which they received their pretended knowledge of future events, and communicated it in inspired verses. The most celebrated of the class, in the vicinity of Cumæ, a city in the Neapolitan territory, has her dwelling thus denoted in the page of Virgil :—"an ample dreary cave, the cell of the sibyl, awful at a distance, whose great mind and soul the prophetic god of Delos inspires, and discloses to her future events." Again he states:—"The huge side of an Eubœan rock is cut out into a cave, whither a hundred broad avenues lead, a hundred doors, whence rush forth as many voices, the responses of the sibyl." With force and eloquence, he describes the distraction of the priestess, a piece of acting to confirm the impression of her communion with invisible powers;—"The god! lo, the god!—on a sudden her looks change, her colour comes and goes, her locks are dishevelled, her breast heaves, and her fiercely untoward heart swells with enthusiastic rage : she appears in a

larger and more majestic form, her voice speaking her not a mortal, now that she is inspired with the nearer influence of the god." After an address to Æneas, the poet adds :—"Thus from her holy cell, the Cumæan sibyl delivers her awfully mysterious oracles, and, wrapping up truth in obscurity, bellows in her cave." There can be little doubt respecting the existence of the sibyls as a class of pretended prophetesses, however uncertain their personal history ; and we may believe Virgil, in depicting the residence of the Cumæan sibyl, to have drawn from nature, referring to a site actually occupied by heathen priestesses.

On the bank of the lake Avernus, under a steep overhung with shrubs and branches, there still exists a long excavation, called the Grotte del Sibylla, which contains a piece of water known as the Sibyl's Bath ; but the situation answers rather to the spot to which the prophetess is represented conducting Æneas, as to the fabled entrance to the world of spirits :—"There stood a cave profound and hideous, with a wide yawning mouth, stony, fenced by a black lake, and the gloom of woods, over which none of the flying kind were able to wing their way unhurt, such (noxious) exhalations issuing from

its grim jaws, ascended to the vaulted skies, for which reason the Greeks called it by the name of Avernus."* At a short distance westward, on a plain, stood the once opulent and populous Cumæ, considerable remains of which exist. On the side of the plain towards the sea, is the tall rock of Cumæ, once crowned with its citadel and temple of Apollo. There are two great chasms traversing the interior of this rock, now called the "Cavern of the Sibyl," and, no doubt, part of the celebrated souterrein where the priestess of Apollo gave the oracular responses. It was extant in all its splendour in A.D. 105, for Justin Martyr describes it as an immense cavern cut out of the rock, as large as a basilica, highly polished, and adorned with a recess or sanctuary, in which the sibyl was seated on a lofty tribunal or throne, and uttered her oracles. However despoiled, when most of the seats of pagan superstition were dismantled, in the reign of Constantine, the cavern remained entire, till the general of Justinian worked

* The Avernus, at present, answers not to the poetical description. But as it occupies the crater of an extinct volcano, in a region of volcanic action, we may suppose great natural changes to have transpired in relation to it, stripping it of its former terrors. This happened in the year 1538, with reference to the adjacent Lucrine lake, which was then partially filled up by a new mountain, the Monte Nuovo, the residue becoming a shallow pool.

comprehension of the "wayfaring man, though a fool." We have another point of discordant contrast, in the universal admission of antiquity, that a favourable response from a pagan shrine, hinged upon the present of "corruptible things, as silver and gold." The orator Demosthenes publicly said, that the "Pythoness Philippised," alluding to Philip bribing her to speak in favour of him, and charged the Athenians to pay no regard to her voice. But, unbought and uninvited, the written oracles of God proclaim to the family of man, the terms of present peace and future blessedness; those terms involve simply the obedience of faith, and thus place the poor upon the same vantage-ground with the rich—"Ho, every one that thirsteth, come ye to the waters; and he that hath no money, come ye, buy and eat; . . . . without money and without price."

CHAPTER VIII.

CAVE-REFUGEES.

Corruption of Christianity—Parnell—Hermitage of Warkworth—Sinaite territory—Nilus—His renunciation of the world—Retires to Sinai—His account of the Asiatics—Treatment of the emperor—Saracenic inroad—Writings of Nilus—The Christian life—Lot's refuge in a cave—David—Cave Adullam—Cave in Engedi—Elijah—At Carmel and Sinai—Grotto of the Apocalypse—Cave tragedy—Isle of Egg—The bandit's home—Herod and the Judæan robbers.

UNDER the reign of corrupted Christianity, and of perverted views of its duties and privileges, when the renunciation of the world was held to mean a personal separation from it, and bodily mortification was regarded as the highway to moral superiority, multitudes abandoned the "city full" to lead a recluse life in situations which Parnell has admirably sketched:—

> "Far in the wild, unknown to public view,
> From youth to age, a reverend hermit grew,
> The moss his bed, the cave his humble cell,
> His food the fruits, his drink the crystal well."

Lonely hermitages, consisting of a single compartment scooped out of the rock, or naturally provided and accommodated to receive their

deluded guests, proclaim the former existence of the anchorite life among us. The failure of the plan, as inducing piety and contentment, is a notorious point of history, and no less so the fostering habits of indolence and vice under a modification of it—the formation of monastic communities—a system alien to the constitution of human nature, and to the genius of the Christian religion. Some crime pressing upon the conscience induced many to embrace a solitary life as an act of expiation, blind to the true way of peace through the atonement of the Son of God, and to the obligations of repentance, the reparation, as far as possible, by useful actions, of the injury done to society by criminal conduct. Such, according to the legend, was the origin of the hermitage of Warkworth, celebrated for its beautiful workmanship, its lovely situation on the north bank of the picturesque river Coquet, in Northumberland, and for the poem of Dr. Percy, bishop of Dromore, devoted to the unhappy story of its constructor, Bertram, who, belonging to a family of rank and wealth, imposed seclusion as a penance upon himself, on account of the murder of his brother, to which he had been instigated by jealousy. His hermitage at Warkworth

was subsequently endowed for religious service by the Percys, and additions appear to have been made to it. It is hewn in the bosom of a free-stone rock, the summit and sides of which are ornamented with trees. At the top of seventeen steps, there is a little vestibule, with a Latin inscription above the inner door-way, of the verse in the psalms, "My tears have been my meat day and night." The first apartment is an excavated and regularly formed chapel, with the figure of the hermit cut on one of the walls, kneeling, one hand placed on his breast, as if lamenting. The chapel leads to an inner apartment, the usual place of residence, from which winding steps conduct to the summit of the rock, where, it is concluded, the hermit had his garden. It was in the east, among its sacred sites, that the anchorite life was most extensively developed. The peninsula of Mount Sinai was well adapted to it, by its loneliness and desolation, by the easy conversion of natural clefts in its mountains into cells, and by the extraordinary circumstances in the Jewish history which invest it with so much interest. This region was early tenanted by anchorites and ascetics, whose abodes in the rock are still to be seen. It appears from a little tract of

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Ammonius, an Egyptian monk, who visited Sinai about A.D. 373, that many were then living here under a superior, residing in separate cells, but holding regular intercourse with each other. They subsisted on dates, berries, and other fruits, without wine, oil, or even bread, but, for the sake of strangers and guests, a few loaves were kept by the superiors. The whole week was passed in the silence and solitude of their cells, until Saturday evening, when they assembled together, continued all night in prayer, received the sacrament on the Sunday morning, and then returned to their respective abodes.

Nilus, whom Mr. Isaac Taylor calls, "the admirable anchoret of Sinai, whose epistles might be perused with advantage by modern Christians," a remarkable man, superior in many respects to the errors of his time, and certainly clear of its vices, was a member of this fraternity, towards A.D. 390. A native of Constantinople, of noble birth, and connected by marriage with its influential families, he became the personal friend of Chrysostom, was honoured with the confidence of the emperor Arcadius, and entrusted with the civil government of the capital. He had every worldly

reason, therefore, to continue one of its citizens, —affluent circumstances, powerful connexions, and a domestic circle consisting of a wife and two children. But in an evil hour, the error of the age seized hold upon him, and his naturally strong understanding succumbed to it. Grieved by the manifold iniquities of the world, he resolved to forsake houses, and lands, and wife, and children; and, having formed a purpose, he was not the man to hesitate in the execution of it. One day, therefore, taking up his children in his arms, he announced his intention to his wife, to retreat from the mixed multitude, and give up all secular occupations. He proposed taking one of the children, a boy, with himself, and leaving the other, a girl, under her care. He told her that remonstrance was in vain; and she, aware of his decided character, made no opposition; and they separated after many tears. Sinai was the spot to which he directed his steps. It was a sanctified place in his esteem, for there the Divine presence had been gloriously displayed, and Moses, in a cave, had seen the heavenly Majesty. Its savage scenery harmonized well with the stern temper of mind under which the recluse was acting. To a man of his stamp, the mount

that once burned with fire, and was girt about with blackness, darkness, and tempest, could call up associations more in unison with his induced temperament, than any pastoral landscape, through which the "river wanders at its own sweet will."

Nilus relates that the Sinaite ascetics occupied rocky cells at the distance of a mile or more from each other, in order to avoid mutual interruption during the week, though occasionally they visited. On the eve of the Lord's day, they descended the mountains to the holy place of the bush, where was a church, and apparently a convent, or, at least, a place where stores were laid up for the winter. Here, they spent the night in prayers, received the sacrament, and separated. In this way many years were passed, and Nilus seems to have borne the privations of his lot contentedly, having embraced it conscientiously. When requested by his brethren to accompany a deputation going to Constantinople to present an address to the emperor, he excused himself, assigning for a reason, that he had formerly been the slave of a great lord at the court, referring to Arcadius himself, who might constrain him to resume the station he had relinquished, if he

returned. When Constantinople was threatened by an earthquake, soon after the banishment of Chrysostom, the terrified emperor applied to him for his prayers on behalf of the safety of the capital. But the hermit was the friend of the exiled prelate, and was not inclined to pacify the imperial fears. On the contrary, he told him not to look for the protection of heaven for a city which was the seat of so many crimes, from whose walls the pillar of the church had been unjustly driven. "How," said he, "can you desire to employ my prayers for a city, which God, in his anger, punishes with earthquakes, and the lightnings of heaven, by which it hourly expects to be consumed, whilst my own heart is itself consumed by the fire of affliction, and my spirit agitated by a continual trembling, caused by the excesses committed within its walls!"

But, though he had retired to his mountain home to escape the world, the world rudely forced itself upon his solitude, and in a way that tried him to the uttermost. On the morning of January 14th, that of the sabbath, the anchorites were about to separate from their weekly communion, when a party of Saracens assailed them, and drove them all into the church, while

they plundered the repository of stores. Afterwards, bringing them out, the barbarians massacred the superior and two others, reserved the younger as captives, and allowed the rest, among whom was Nilus, to retire to the mountains. They descended at night to bury their brethren, and Nilus went forth a wanderer in search of his son, who was among the captives. After many anxious inquiries, he succeeded in finding him at Elusium, where he had been sold as a slave, by singular good fortune coming into the possession of Hilarion, the bishop. Both ultimately returned to Sinai, practising more rigorous self-denial, in the clefts of the rock, in gratitude for the protection afforded them by Providence.

The writings of Nilus, one of the best examples of his class, furnish ample evidence of that corruption of manners prevailing in his day, which naturally springs out of reducing religion to bodily service, and which continued for centuries afterwards the disgrace of Christendom. Those who professed to desert the world he describes as wearing the monastic habit, because of the licence it afforded. "We are despised," says he, "as a troublesome and covetous rabble, by those who ought to rever-

ence us. We are the sport of the market-place, as really differing from the world but in dress, wearing merely an exterior of honesty." He writes of the monks in general:—"Those who ought to be havens and temples of God, and his sheep, become rocks, and whited sepulchres, and ravening wolves. They besiege the doors of the rich. Cities are oppressed with the number of these vagrants. Of those received hospitably, a short time has revealed the feigned piety, and their infamous lives have been discovered. So that now, all who appear modest and holy are imagined to be corrupters, and worse infected than as if with leprosy, and there is less trust reposed in monks than in assassins and highwaymen!" It is not to the church of the cell and the cloister, with a few exceptional instances, that we are to look for any semblance of the church of the New Testament, but to the church after the Reformation, or before the monastic age, or during its continuance, surviving as a scanty, oppressed, and persecuted remnant. A production of the immediately post-apostolic era, written by an unknown author, the Epistle to Diognetus, gives a beautiful and scriptural delineation of the Christian life:—

"The Christians are not separated from the rest of mankind by country, or by language, or by customs. They are confined to no particular cities, use no peculiarity of speech, adopt no singularity of life. Their doctrine embraces no tenet built upon the reasoning and subtlety of crafty men; neither do they, like others, uphold the opinion of any man. Dwelling in the cities, whether of Greeks or barbarians, as every man's lot is cast, following the customs of each country in dress, and diet, and manner of life, they yet display the wonderful, and, indeed, astonishing nature of their own polity. They dwell in their own country, but as sojourners. They partake of all things, as denizens; they endure all things, as strangers. Every foreign land is their country; their own country is to each a foreign land. Like other men, they marry and have children; but their children they expose not. They are in the flesh; but they live not after the flesh. They abide on earth; but they are citizens of heaven. They obey the laws which are established; and in their own lives are superior to the laws. They love all men; and are persecuted by all. Men know them not, yet condemn them. Being slain, they are made alive; being poor, they

make many rich; deprived of all things, in all things they abound. Being dishonoured, they are thereby glorified; being calumniated, they are justified; being cursed, they bless; being reviled, they give honour. Doing good, they are punished as evil-doers: when punished, they rejoice, as being made alive,—in a word, Christians are in the world what the soul is in the body. The soul is dispersed over all the members of the body; Christians over all the cities of the world. The soul dwells in the body; but is no part of the body: Christians dwell in the world, but are not of the world."

This exhibition of primitive Christianity is equally at variance with the two extremes of conventual incarceration, and careless intercourse with the world. The life of Christ sufficiently indicates the "good and the right way" to his followers, that of interchanging publicity and retirement—the multitude and the mount.

To "flee into the mountains" was the recommendation of our Lord to his disciples, upon the appearance of the Roman armies in Judæa—a practice now, and from time immemorial observed by the eastern tribes in seasons of alarm and danger. The household furniture of

the Asiatics, consisting of comparatively few articles, is readily transported with them, so that, in a very short space of time, towns and villages are left empty, in expectation of the arrival of troops prone to plunder and outrage, the inhabitants meanwhile availing themselves of the temporary accommodation afforded by caves in the neighbouring hills. "Escape to the mountain," was the instruction of the angels to Lot, in order to avoid the danger which threatened Sodom; and after being allowed to tarry in a neighbouring city, he "went up out of Zoar, and dwelt in the mountain, and his two daughters with him; for he feared to dwell in Zoar: and he dwelt in a cave, he and his two daughters with him."

Hunted by persecuting power, liberty and religion have often fled to such sites for refuge, and found a secure asylum in them. Thus David, in his wanderings to avoid the hand of Saul, "escaped to the cave Adullam," where his brethren came to him, and he collected a force of four hundred men for his defence. This has been identified with the cavern of Khureitun, between Bethlehem and the Dead Sea. It runs into a range of cliffs, according to Irby and Mangles, by a long, winding, narrow pas-

sage, with small chambers or cavities on either side, and is only accessible on foot. "We soon came," they remark, "to a large chamber with natural arches of a great height; from this last there were numerous passages, leading in all directions, occasionally joined by others at right angles, and forming a perfect labyrinth, which our guides assured us had never been thoroughly explored; the people being afraid of losing themselves. The passages were generally four feet high, by three feet wide; and were all on a level with each other. There were a few petrifactions where we were; nevertheless the grotto was perfectly clear, and the air pure and good." This description is only worth quoting as affording a sample of the large natural caverns which are common in the highlands of Palestine, and are so frequently referred to in Scripture. The supposition of this cavern being the scene of David's retreat, is only the random guess of the monks in the middle ages.

Subsequently, David retired with six hundred followers into the "wilderness of Engedi. Then Saul . . . went to seek David and his men upon the rocks of the wild goats; and he came to the sheep-cotes by the way, where was a cave,"* a

* 1 Sam. xxiv. 1—3.

place frequented by the shepherds of the district. The capacity of the cave is obvious from the fact that the company of the fugitive were concealed in the interior, while the monarch entered it, probably no further than the mouth, and lay down to take his noontide sleep in the shade, unconscious of their presence. Caverns sufficiently extensive to admit of this are by no means uncommon in Palestine. The one in question might consist of a series of connected chambers, the inner ones being occupied by the pursued party, or, if a single large apartment, with a narrow entrance, the darkness at the sides and the far extremity would be so profound as effectually to screen them from observation. Engedi, the scene of this transaction, is a district on the western shore of the Dead Sea, abounding with wild rocks and frightful defiles, which preserves its ancient name in the A'in Jidy of the Arabs, both terms signifying the "Fountain of the Kid." Travelling through it, Dr. Robinson states:—"In the course of the day we had already startled a gazelle; and had seen also a jackal, which at a distance might be mistaken for a fox, though his colour is more yellow, and his movements less wily. As we now came in view of the ravine of the Ghâr, a

beden (mountain goat) started up and bounded along the face of the rocks on the opposite side. Indeed, we were now in the 'wilderness of Engedi;' where David and his men lived among the 'rocks of the wild goats;' and where the former cut off the skirts of Saul's robe in a cave. The whole scene is drawn to the life. On all sides the country is full of caverns, which might then serve as lurking places for David and his men, as they do for outlaws at the present day."

The record of the New Testament, respecting several of the worthies of the ancient dispensation, naturally recurs to remembrance: "they wandered about in sheep-skins and goat-skins; being destitute, afflicted, tormented; (of whom the world was not worthy:) they wandered in deserts, and in mountains, and in dens and caves of the earth."* This was eminently true of the Jewish prophets who flourished in the days of the idolatrous kings of Israel. When the famine was sore in the land, and Jezebel was eager to cut off the prophets of the Lord—a general denomination for the teachers of religion—"Obadiah took an hundred prophets, and hid them by fifty in a cave, and fed them with

* Heb. xi. 37, 38.

bread and water," dividing them into two bands in separate places of concealment. In that time of persecution, Elijah,

> "The great Thesbite, who on fiery wheels
> Rode up to heaven,"

is supposed to have retired to the clefts of Carmel, like his successor Elisha, after the destruction of the young Bethelite idolaters. This is not an improbable circumstance, though supported only by tradition. References are made to the natural asylums with which the mountain abounded:—

> "If they dig down to the grave,
> Thence shall mine hand take them:
> And if they climb up to heaven,
> Thence will I bring them down;
> And if they hide themselves in the top of Carmel,
> I will search for them, and thence will I take them out."*

The Carmelites show the cave in which the prophet lived, the fountain at which he drank, and the grotto in which he taught the sons of the prophets. The cave called the "School of Elias," is a chamber in the rock, squared with great care, a low bench of stone running round two sides of it, at present offering a comfortable halt for travellers, as it affords shelter and shade, a cistern of excellent water, and a place for horses. It is certain that Elijah retired for a period to the Sinaite territory, and took

* Amos ix. 3.

refuge in one of its retreats:—"he arose, and went unto Horeb the mount of God, and he came thither unto a cave, and lodged there." The monks of the district conduct the stranger to a chapel dedicated to his name, at the height of 1400 Paris feet above their convent in the valley below. In the interior, a low rude building, they show near the altar a hole just large enough for a man's body, as the cave in which he dwelt.

Banished by the emperor Diocletian to Patmos, the apostle John may well be conceived to have been at a loss where to shelter his head, when landed on the shores of that island of the Ægean. It does not contradict the natural order of events to suppose, but is highly probable, that he found a sanctuary in one of the numerous grottoes by which the spot is characterized. The cave pointed out as the grotto of the Apocalypse, where the exile was in the Spirit on the Lord's day, and heard the voice of the trumpet, and saw the majesty of the Son of God, is now partially encased with stonework, and converted into a chapel, and has been enlarged on that side where the natural rock appears, the Greek ecclesiastics formerly making a considerable profit by the sale of

pieces of it. Patmos is the "holy land" of the maritime Greeks, associated with the proudest recollections of their religion, and wearing to their apprehension, on its every cliff and headland, an impress of sanctity. Dr. Clarke saw the island from his vessel, when the Ægean was lighted up with the beams of the setting sun; and he introduces, to illustrate the scene, the splendid picture described by the evangelist, when he saw, as it were, "a sea of glass mingled with fire." The towering cliffs—the battlements of the monastery of the Apocalypse—and the whole island consecrated by the footsteps of God's last prophet—seemed to be floating on a fiery abyss; and the traveller instinctively connected the face of nature with the golden glories of the New Jerusalem, "which had no need of the sun, neither of the moon to shine in it: for the glory of God did lighten it," seen in vision within its bounds.

But it has been frequently in vain, that the unfortunate and oppressed have retired to dens and caves of the earth, to secure themselves from the vengeance of man. Scott relates a tragedy which has conferred a horrible celebrity upon a cavern in one of the western isles of Scotland:—

"Merrily, merrily bounds the bark
O'er the broad ocean driven,
Her path by Ronin's mountains dark
The steersman's hand has given.
And Ronin's mountains dark have sent
Their hunters to the shore,
And each his ashen bow unbent,
And gave his pastime o'er,
And at the island lord's command,
For hunting spear took warrior's brand.
On Scooreigg next a warning light,
Summon'd her warriors to the fight;
A numerous race, ere stern Macleod
O'er their bleak shores in vengeance strode,
When all in vain the ocean cave
Its refuge to his victims gave.
The chief, relentless in his wrath,
With blazing heath blockades the path;
In dense and stifling volumes roll'd,
The vapour fill'd the cavern'd hold!
The warrior-threat, the infant's plain,
The mother's screams were heard in vain;
The vengeful chief maintains his fires,
Till in the vault a tribe expires:
The bones which strew that cavern's gloom,
Too well attest their dismal doom."

Scooreigg, or the Scuir of Egg, a high peak in the centre of the small island of that name, rises 1339 feet above the sea. Tradition relates, that a few MacLeods of the isle of Skye having landed upon the isle of Egg, offered an affront to some of the young women, which was resented by the inhabitants, who bound them hand and foot, and turned them adrift in a boat, which the winds and waves at length bore safely to Skye. Exasperated by this treatment of some of his clan, the laird of MacLeod set sail to take revenge. The unfortunate

islanders retired to a cavern, which so effectually concealed them, that their foes departed, under the impression that they had actually quitted the spot. But before they were out of sight, one of the fugitives incautiously left the hiding-place, and, being observed from the vessels, the MacLeods immediately returned, and succeeded in tracing the man to his retreat by his footprints, a slight snow having fallen. Refusing to surrender up the individual offenders to his vengeance, the MacLeod chieftain caused a fire of turf and fern to be made at the entrance of the cavern, and maintained it with inflexible cruelty till all the inmates were destroyed by suffocation. The scene of this horrible atrocity has nothing outwardly to distinguish it from an ordinary animal burrow. The mouth will with difficulty admit the passage of an individual creeping on his hands and knees. But within, the cave expands to eighteen or twenty feet in breadth, the same in height, and runs 255 feet into the bowels of the rock. The incident does not come down to us as a doubtful legend, or from a very ancient date, as bones, skulls, and other remains of the sufferers, found scattered along the floor of the cavern, have borne a meancholy witness, the

relics amounting altogether to those of two hundred individuals.

In the wild and lawless times of Scottish history the caverns of the highlands, situated in almost inaccessible fastnesses, sheltered the bandit in the prosecution of crime. A cavern on the coast of Galloway was for twenty-five years the home of Donald Bane, the miserable freebooter of 1600, who brought up a numerous family in it, to a robber-life, his entire progeny, to the number of forty-eight, being finally captured and put to death at Edinburgh. Josephus gives an interesting account of the measures adopted by Herod, to rid Judæa of numerous gangs of robbers, who had their head-quarters in the caves of the mountain districts, from whence they sallied to commit their depredations in the open country. These caves, probably those in the wild upland region of Engedi, were at a considerable height in precipitous cliffs, only to be reached by narrow rugged paths, where a few resolute individuals might successfully make a stand against an army. Herod therefore caused a number of his soldiers to be let down in large chests by iron chains from the top of the rocks. Upon reaching the mouth of one of the caves, the

soldiers, with long poles armed with hooks, hauled out the robbers, and dashed them headlong down the precipices. In other cases, where the marauders could retire so far back as to be out of the reach of these weapons, the soldiers leaped into the caves and overpowered them; and where there were combustible materials, they kindled fires, and speedily despatched the outlaws. "Mischief" and "violent dealing," sooner or later, have thus yielded a return of pains and penalties; and every unrenounced course of sin has this consequence invariably attached to it. However effectually concealed from human observation the crime may be, and secure from temporal chastisement the person of the criminal, "God is witness" of what transpires in every solitude, and will "render unto every man according to his deeds." It is salutary to have the sublime truth strongly impressed upon the mind:— "Whither shall I go from thy Spirit? or whither shall I flee from thy presence? If I ascend up into heaven, thou art there: if I make my bed in hell, behold, thou art there."

CHAPTER IX.

CAVERN TEMPLES.

Scandinavian mythology — Thor's cavern — India — Cave of Elephanta — Description — Sculptures—Head of Shiva — Brahminism and Budhism—Distinction of cavern temples—Mr. Erskine — Salsette — Ellora — Egypt — Ipsambul—Minor temple—Rameses the Great—Grand rock temple—Colossi—Giovanni Finati—Dimensions of statues—Sir F. Henniker—Greece — Caves sacred to rural deities — Plato — Grotto on Hymettus — Described by Chandler — Corycian cave — Mr. Raikes—Greek mythology.

Before the light of Christianity and civilisation dawned upon northern Europe, while a barbarous mythology held sway over its tribes, woods and caves seem to have been specially devoted to the celebration of its rites, and the natural gloom of such situations was in accordance with the revolting nature of the ritual observed. Odin's grove, and Thor's cavern, are the local names of sites which preserve the memory of the service in former times connected with them. The latter—"the blood-smear'd mansion of gigantic Thor," to whom the Druids are said to have offered human

victims—is near the beautiful valley of Dovedale in the Peak, an incongruous connexion, one of the most remarkable caverns in the whole range of the limestone district. Its commanding situation, its noble entrance and capacious interior, its application during heathen times to the savage purposes of the Scandinavian idolatry, and its connexion with names that have acquired celebrity, however undesirable in some cases—Darwin, Rousseau, Congreve, and others—concur to invest it with interest. It opens broadly to the daylight, at a considerable elevation, in the face of a stupendous rock, and is reached by a contracted path which requires to be trod with caution. The dry channel of the Manifold curves round the foot of the mountain, the stream, except in very rainy reasons, sinking hard by into a fissure of the limestone strata, as mentioned in a former chapter, and following for some distance a subterranean course. The lofty vaulted entrance of the cavern, and its ponderous branching roof, give it the aspect of a place intentionally constructed to be a temple. About twenty paces within, an aperture on one side of fifty feet in height forms a natural window reaching almost to the

floor. This, with the spacious opening in front, serves to make the excavation light, airy, and commodious, and enables the whole proportions of the cavern to be grasped at one view. Farther within, on an elevated part of the floor, where the gloom begins to struggle with the light, there is a detached stone in the form of an altar, on which it may be feared that many a human victim has been sacrificed to the idol god Thor, whose name the site retains. Happily the darkness has passed, the true light now shines upon our hills and valleys, making manifest a revelation breathing "peace on earth, and good-will to men."

In India, cavern-temples, upon a gigantic scale, occur in great numbers, and an amount of labour and skill, which it is difficult to estimate, has been expended upon their formation and adornment. In the first instance, caves in their natural state were, no doubt, employed for religious purposes, the ready shelter they afforded suggesting such an appropriation of them ; but the disposition to honour the idol god, as well as to accommodate a multitude of priests, would soon lead to the conversion of natural excavations into symmetrical and gorgeous shrines upon a larger

plan, and to the formation of altogether new cavernous structures. In this way arose those wonderful chambers in the solid rock, architecturally formed, which at Elephanta, Salsette, and Ellora, the European contemplates with astonishment, though in a state of degradation, having been long abandoned to the moles and to the bats.

Elephanta, a small island off the Mahratta shore near to Bombay, derives its name from the colossal figure of an elephant cut out of the solid black rock on the acclivity of a hill, which the religious zeal of the early Portuguese invaders led them to mutilate, and which is now a complete ruin. The cave for which the island has become so celebrated occurs half way up the steep ascent of the mountain in which it has been excavated. Though still frequently visited by devotees, it has no establishment of priests, nor is any care bestowed upon its preservation from injury and decay. The entrance is overhung with brushwood and wild shrubs, and pools of water collect upon the floor. The dimensions of the cave are one hundred and thirty feet long, by one hundred and thirty-three feet broad, the height varying from fifteen to seventeen and a half,

owing to the floor and the roof not being in the same plane. Columns arranged in rows, some of which are broken, support the roof, and pilasters are carved on the sides. The columns are fluted, and stand on square pedestals, but, instead of being cylindrical, they bulge out in the middle, as if under the weight of the superincumbent rock. The interior appears to have been painted, some of the colours being still visible, but none of the subjects represented can be traced. The plan of this temple-cave is thus regular, and its general aspect highly imposing, showing a considerable advance in the arts on the part of its constructors; but, carefully examined in detail, those faults are observable which characterise a people in an incipient state of civilisation. The columns in the ranges deviate from the straight line. They are not placed at equal distances; they are seldom of the same size; and many of them diverge from the perpendicular. Even the cave itself is longer on one side than on the other; and the sculptures are rough and coarse in their execution.

The sculptures at Elephanta consist of from forty to fifty colossal figures, ranged along the sides of the cave, without being quite detached

from the wall. The principal object is immediately opposite the main entrance. This is an enormous bust with three faces, a triple-headed idol. One head faces the spectator, another looks to the right, and a third to the left. This is a representation of Shiva, the destroying power or deity, to whom the temple is thought to have been peculiarly dedicated. According to the Brahminical system, three energies—the creative, preserving, and destroying—are embodied, under the names of Brahma, Vishnu, and Shiva. The two latter are supposed to have been incarnated on earth, in different ages and in various shapes. The central head of the sculptured figure personifies Shiva abstractedly; the right-hand face, looking east, having a severe expression, indicates him incarnated; the left-hand face, a feminine countenance, is that of his consort Parivati. This triple figure is a third-length, or only shown down to the breast. Its gigantic size appears from the measurements given, seventeen feet ten inches from the top of the cap of the central head to the bottom of the image; twenty-two feet nine inches, the length of the horizontal curved line, embracing the three heads at the height of the eyes, and touching the eyes.

The whole is carved out of a dark-gray basaltic rock. The head of Shiva incarnate is remarkable. His cap is adorned with various figures, among which a skull, or death's-head, may be distinguished; his countenance exhibits the usual indications of passion; and in his hand he holds a serpent, the *cobra di capella*, which twists itself round his arm, and rears its head so as to look him in the face. How deplorable for the human mind to be in bondage to an imaginary being represented by this monstrous shape and its terrible emblems!

The millions of Hindostan, Burmah, and China, with the adjacent islands, embracing a large portion of the human race, are principally disciples either of Brahminism or Budhism —two different systems and inveterately hostile sects. Cavern temples occur, among the monuments of past time, equally common to both, and in close contiguity. The gods of Brahminism are supposed to have often become incarnate, appearing under a variety of forms, with many heads and hands, or with the heads of animals, and other unnatural combinations. Hence the uncouth and hideous shapes sculptured at Elephanta. On the contrary, the god of Budhism is a quiescent being as far as the

human race are concerned—no god at all to them, neither regarding their actions, nor requiring their worship. Yet in different ages, Budhs, or men of surpassing piety and self-denial, have appeared upon the earth, who, after removal to a superior state, continue to exercise a terrestrial influence, and are proper objects of worship. Hence, in Budhist temples there are no many-headed and many-handed monsters, no combinations of man and beast, like those which distinguish the Brahminical, but simply the images of men in various attitudes, sometimes standing upright, but usually sitting cross-legged in a meditative posture.

Referring to Elephanta, Mr. Erskine remarks, that "nothing presents itself which can lead to a satisfactory solution of the important and curious question, in what age, or by what dynasty, was this vast temple completed? One fact is worthy of notice, that a greater number of magnificent cave-temples present themselves on this part of the western coast of the peninsula of India, than are to be met with anywhere else in Hindostan. The caves of Elephanta; those of Kanara, Amboli, and others, on the island of Salsette; the fine

cave of Carli, on the road to Poona by the Bor Ghaut; and the still more extensive and magnificent ranges at Ellora; not to mention several smaller cave-temples in the Kohan and near the Adjunta Pass, are all on Mahratta ground, and seem to show the existence of some great and powerful dynasty, which must have reigned many years to complete works of such labour and extent. The existence of temples of opposite characters, and of different and hostile religions, only a few miles from each other, and in some instances, even united in the same range, is a singular fact, which well deserves to excite the attention and exercise the industry of the Indian antiquary. Thus, within no great distance from Bombay, we have the caves of Kanara on the island of Salsette, and those of Carli on the main land, both evidently belonging to the Budhists; while those of Amboli, also on Salsette, and of Elephanta, on the adjoining island, belong to the Brahmins; and the wonderful caves of Ellora possess excavations of both classes." There is some reason to suppose that Budhism was once the prevailing faith of Hindostan, that Brahminism grew out of it, which, upon acquiring power and numbers,

assumed a persecuting attitude, expelled the professors of the ancient religion from western India, who extended themselves beyond the Ganges into China.

The cavern temples of Salsette, referred to in the preceding extract, are of great extent and grandeur. Those at Kanara, situated in a wild country of great beauty, contain boldly-carved colossal statues of Budha, placed in arched recesses, and represented standing and sitting, with his legs folded under him, and his hands joined as if in prayer. They are surrounded by jungles in which the tiger lurks, the animal sometimes visiting these deserted shrines, leaving his footprints upon the floor, a memorial to the traveller of danger in the neighbourhood. But by far the most striking and extensive excavations are at Ellora on the main land, in the territory of Hydrabad. Here, a Brahminical temple, now called the Doomar Leyna, or the "Nuptial Palace," derives its name from a sculpture supposed to represent the marriage of Shiva and Parivati. The roof, nineteen feet high, is supported by twenty-eight pillars, and twenty pilasters. The other dimensions, one hundred and eighty-five feet long, by one hundred and fifty broad,

include an area larger than that of Westminster Hall, the floor of the temple containing twenty-seven thousand seven hundred and fifty square feet, and that of the hall only twenty thousand feet. Out of another excavation in this place, also Brahminical, the temple of Keylas, it has been calculated, that at least three millions of cubic feet of rock must have been cut away to form it. The Ellora caves form a range along the side of a gently sloping hill, about a mile in length. The useless expenditure of labour in their formation is the least painful part of the reflections they suggest, connected, as they so surely have been, with debasing superstitions, disgusting observances, and bloody sacrifices.

Egypt is no less remarkable for its excavations usually called temples, which bear a striking resemblance to those of India. The entrances have, in almost all instances, been covered up for ages with immense accumulations of sand, wafted from the desert by the winds. They exhibit on their walls historical sculptures of great interest, representing the triumphs of various heroes, as Sesostris, and mythological sculptures referring to the gods to whom they are dedicated, Ammon, Ra, and

Cnuphis, and connected with them, interior and exterior, are colossal statues of enormous dimensions, executed in a rude but grand style.

The most celebrated of these constructions are the two at Ipsambul.

The minor temple, dedicated to Athor, who is represented under the form of the sacred cow, is about twenty feet above the level of the river. It was found by Burckhardt, who first described it, free from all accumulations of sand, in as perfect a state as if it had been just completed. The exterior shows six colossal standing figures, thirty feet high, hewn out of the rock, and deep sunk in niches, three being on each side the door-way of the excavation. The figures look towards the Nile, and have each one foot advanced. The central one of each triad is a female, and the same personage with a different head-attire. The two attending her on both sides are males, and different representations of the same individual. Smaller figures standing are grouped round the larger. The name of Rameses, borne by several of the ancient Egyptian monarchs, has been made out in hieroglyphical inscriptions; and the colossi are supposed to represent Rameses the Great, now generally considered to be identical with

Sesostris, his queen, and their children. The interior presents several chambers, the roofs of which are painted blue, a favourite colour for ceilings with the ancient Egyptians, the walls being adorned with painted bas-reliefs representing offerings of palm-branches and the lotus to Osiris. In the year 1817, when Belzoni was at this spot, another temple appeared, at the distance of a few hundred feet, evidently larger, but so buried in the sand that he despaired of being able to explore it. At length, aided by captains Irby and Mangles, with native assistance, he succeeded in opening it, but had to remove upwards of thirty feet of sand before reaching the top of the entrance.

The second and larger temple of Ipsambul, dedicated to Ra, unveiled by the labours of the parties named, is one of the most extraordinary monuments of antiquity; and, in comparison with it, the one just described sinks into insignificance. Four sitting enthroned colossi are at the entrance. They are the largest in Egypt or Nubia, except the Sphinx of the pyramids, to which they approach in the proportion of nearly two-thirds. Giovanni Finati relates, that when he stood upon a level with the necklace of one of the figures, he could

hardly reach the beard, while one of the sailors climbed and sat astride upon the ear; yet all observers agree, that the countenances evince a beauty of expression, the more striking, as it is unlooked for, in statues of such dimensions. The following are Belzoni's measurements:

	ft.	in.
Length of the ear	3	6
Length of the face	7	0
Length of the beard	5	6
Length from the shoulder to the elbow	15	6
Breadth from shoulder to shoulder	25	4
Height excluding the cap	51	0
Height of the cap	14	0

In the interior, there are four principal chambers behind each other, with a number of attached apartments. The first chamber, a noble hall, has two rows of square pillars in a line, a standing colossus being attached to each pillar, the tops of their turbans reaching the ceiling, as if sustaining the superjacent rock. Their arms are crossed on the breast. In one hand they hold the key of the Nile, in the other a scourge. The walls are covered with representations of battles, storming of castles, triumphs over the Ethiopians, and sacrifices. These are conjectured to refer to Rameses the Great, or Sesostris, whose name and title occur in various parts of the excava-

tion, and who may be supposed to have originated it. Though the hewn-out rocks of Ipsambul are usually called temples, their object seems as much to have been to commemorate a conquering monarch as to serve a religious purpose. Sir F. Henniker remarks: "Ebsambul is the *ne plus ultra* of Egyptian labour, and is in itself an ample recompense for my journey. There is no temple of either Denderah, Thebes, or Philæ, that can be put in competition with it; and I am well contented to finish my travels in this part with having seen the noblest monument of antiquity that is to be found on the banks of the Nile."

Cavern temples, natural and excavated, were common among the Greeks and Romans, especially among the former, who regarded such sites as the favourite haunts of some of those fabled superior powers among whom the empire of nature was parcelled out by the ancient mind, ignorant of the doctrine of one omnipresent Being, and incapable of conceiving a truth so lofty. In Greece, the caves and grottoes with which its mountains abound, the nymphs were believed to delight in—a numerous class of inferior female divinities, generally associated, however, with others of a

higher grade, the rustic Pan, or the pastoral Apollo. The usages of the people in relation to these objects of their regard call up to recollection Elijah's taunting language to the priests of Baal, expressive of the gross ideas which their rites indicated respecting the object of their worship. The Greek countryman brought gifts of cakes or fruit, with libations of milk, oil, and honey, for the nymphs, believing them to have appetites like the human, and to partake of these refreshments without diminishing them. The shepherd's pipe was silent at noon upon the mountains, lest Pan should be aroused, then sleeping after the exercise of hunting. Both Pan and the nymphs were supposed capable of suffering from heat or from cold ; and hence the construction of retreats for their accommodation where nature had not provided them, caves and grots being hewn in the rocks where shade and shelter might be had.

Plato, when a boy, was taken by his parents to a grotto on Mount Hymettus near Athens, in order to present an offering to Pan, the nymphs, and the pastoral Apollo. The Corycian cave on Mount Parnassus, of natural construction, was an object of the same super-

stition, and a much more celebrated site. This cave, said to be capable of bivouacking three thousand troops, afforded an asylum to some of the Greeks fleeing from the invading hosts of Xerxes; and in the recent struggle with the Turks it was often occupied by the military. "The stalagmitic formations," says Mr. Raikes, "are wild as imagination can conceive, and of the most brilliant whiteness. It would not require a fancy, lively, like that of the ancient Greeks, to assign this beautiful grotto as a residence to the nymphs. The stillness which reigns through it, only broken by the gentle sound of the water, which drops from the points of the stalactites; the dim light admitted by its narrow entrance, and reflected by the white ribs of the roof, with all the decorations of the interior, would impress the most insensible with feelings of awe, and lead him to attribute the influence of the scene to the presence of some supernatural being. An inscription, which still remains on a mass of rock, near the entrance, marks that the cavern has been dedicated to Pan and the nymphs."

The idea of locality was inseparably connected with the divinities of classical mythology. Their power and presence were

specially associated with some valley, or grove, or cave, or town, which the votary must visit in order to render them propitious to him.—Though acknowledged to be divine out of their peculiar domains, yet their worshippers were rather averse to proselytism, fearing lest, by an extended communication, the local influence of the deity should be weakened, and his predilection for them transferred to others. Hence Ajax, in Homer, advised the Greeks to pray apart and in silence, lest the Trojans should overhear, and, by imitating them, obtain the favour of the gods to their own detriment. It is not unuseful to recur to the "times of that ignorance," as adapted to arouse a salutary sense of obligation for the revelation of God with which we are favoured—Omnipresent and All-sufficient—who

> "Lives through all life, extends through all extent
> Spreads undivided, operates unspent;"

and through the "Mediator of the new covenant," wherever the tribes of men are scattered, there is "boldness and access with confidence by the faith of him," to the inexhaustible stores of the Divine mercy and grace.

CHAPTER X.

SEPULCHRAL CAVES.

Cave of Machpelah—Valley of Jehoshaphat—Jewish tombs—Grave of Lazarus—Sepulchre of Christ—Opening of the graves—Tombs of the judges—Tombs of the kings—Egypt—Burial-place of Thebes—Belzoni—Mummies—Canary islands—Funereal cave at Teneriffe—Cave at Ataruipe—Views of the Egyptians—Petræa—Sepulchres—Greece—Telmessus—Mountain of tombs—Inscriptions—Regulations at funerals—Paul—Catacombs of Rome—Christian inscriptions—Views of Christianity.

"MAN goeth to his long home;" and, singularly diversified as have been the dwellings of men in life, those to which they have been consigned in death are no less so—the bed of earth in which the peasant reposes beneath the grassy turf—the stately mausoleum of the noble—the rude heap of stones which marks the resting-place of the savage—the vast tumuli inclosing the ashes of ancient kings—the rock-hewn sepulchre, and the natural cave. The first record of the disposal of the dead refers to the "cave of the field of Machpelah before Mamre, the same is Hebron," which became the family

tomb of the patriarchs, and received the remains of Abraham, Isaac, and Jacob. This, we may presume to have been the ancient universal custom of the eastern nations, to select the natural caverns that might be at hand for burial places, usually hollowing niches in the interior walls for the reception of the dead. Where such conveniences did not offer themselves, they were constructed in the sides of rocks and mountains. The "stones of darkness, and the shadow of death," is a phrase in the book of Job, founded upon this usage. The practice obtained among the Jews, and is largely exhibited by existing monuments in the valley of Jehoshaphat, which skirts Jerusalem. There, many of the race even now come from afar to lay their bones by those of their fathers, expecting, according to their interpretations of prophecy, that a day will arrive when the Messiah in that spot will make a visible demonstration of his glory, the dead arise, all nations be judged in the valley, and Israel be avenged.

The great majority of the tombs in the valleys round Jerusalem exhibit the same general mode of construction. A small doorway, usually simple and unadorned, has been

cut in the perpendicular face of the rock, leading to one or more chambers excavated out of it, commonly upon the same level with the door, but sometimes having a descent of several steps. The walls of the chambers are plainly hewn, and have niches to serve as resting-places for the dead. In some instances, advantage has been taken of a spot where the stone has been quarried for building purposes, in order to obtain a perpendicular face for the door, a square area has been hewn out in a ledge, and tombs excavated in the front and lateral sides. Many of the doors and fronts have been broken away by violence, so as to leave the interior chambers exposed. Most of the sepulchres seem to have been simply secured by large stones or blocks at the doors, easily removed and replaced, upon a fresh tenant being brought to the family grave. It was the general custom to deposit the body in a chamber, or in a niche, without any sort of coffin, but wrapped round with grave-clothes, though, in the case of the noble and wealthy, stone coffins, with sculptured lids, or sarcophagi, were used.

The preceding remarks illustrate several passages in the New Testament. The grave of Lazarus is thus described:—"It was a cave,

and a stone lay upon it." In this case, the chambered tomb was below the level of the entrance, descended into by steps, so that the securing block at the mouth might be said to be upon it. "Jesus said, Take ye away the stone;" and at the voice of Omnipotence, "the dead came forth, bound hand and foot with grave-clothes." Joseph of Arimathea laid the body of our Lord, "wrapped in a clean linen cloth," "in his own new tomb, which he had hewn out in the rock, and rolled a great stone to the door of the sepulchre." In this case also, the chamber was either below the level, or it had a very contracted entrance, Peter "stooping down" to obtain a view of the interior. The astonishing event coincident with the death of Christ, when the "graves were opened," was the removal of the securing stones from the doors of the sepulchral caves. It was the preparation when this occurred; and as servile labour then ceased, and continued through the ensuing sabbath, the chambers of the dead remained open to the inspection of the living. The reign of death was thus laid bare, but only displayed that, by contrast, the energy of the Prince of life might the more illustriously appear, by re-animating some of the long-slumbering departed, which

took place posterior to his own resurrection, and symbolized its power. The place where the Lord lay, it would be impossible for the Christian mind to regard without intense emotion, could it be identified. But the church of the Holy Sepulchre, assumed to cover the spot, has no valid claims to that distinction. The site is, no doubt, irrecoverably lost, yet the facts, that Christ died for our sins according to the Scriptures, and that he was buried, and that he rose again the third day, are eternal truths, upon which faith may securely repose in hope of the resurrection to a glorious life.

There are two remarkable exceptions among the ancient sepulchres contiguous to Jerusalem. One called the Tombs of the Judges, at the head of the valley of Jehoshaphat, presents a portico, surmounted with a fine pediment, sculptured with flowers and leaves. From the middle of this portico a door leads into an anti-chamber, having on one side two rows of deep narrow crypts, each just large enough to receive a corpse, the side, as Sandys says, being "cut full of holes in the manner of a dove-house." On the two other sides of this room, small doors lead to apartments similarly furnished with

crypts. Dr. Robinson counted about sixty, without making a full enumeration; and conceives the name of this tomb to refer to the judges of the Jewish sanhedrim; and to have arisen from a correspondence between the number of the crypts and the seventy members who composed that tribunal. Another sepulchre, called the Tombs of the Kings, consists of a large square court, sunk in the solid rock, which is entered by a broad sloping trench. A portico, excavated out of the rock, occurs on one side of the court, ornamented with carved clusters of grapes between groups of flowers, intermingled with Corinthian capitals, forming the finest specimen of ancient sculpture extant at Jerusalem. A low entrance leads to many excavated chambers with crypts. The passages by which the several apartments are entered, were once closed by stone doors with carved panels, which have been thrown down and broken, the fragments now lying on the floor. This sepulchre, from its extent and magnificence, has been assigned to the ancient Jewish kings, according to its present name; but the tombs of David and his successors were upon Zion, with the four exceptions of Uzziah, Ahaz, Manasseh, and Amon, who appear, however,

to have been buried within the city. Still, from the workmanship bestowed upon the spot, it has been most likely a royal burial-place, perhaps of the princes of the line of Herod.

The same mode of burial prevailed in ancient Egypt, except that the bodies of the common dead were carefully preserved by embalming in their rocky caves—a practice observed among other nations only with reference to certain ranks. The burial-place of Thebes is a tract of rocks about two miles in length, at the foot of the Libyan mountains. Here countless generations of the "city of the hundred gates" are gathered together in receptacles, of which Belzoni draws a striking picture. He found every part of these rocks cut out by art, in the form of large and small chambers, each of which has its own separate entrance, communication seldom subsisting from one to another. The suffocating air of the passages in these repositories, lined with the dead, the passages themselves partially filled up by the falling in of the ceilings, so as to oblige the explorer at certain points to crawl on his hands and knees—the heaps of bodies—the strong effluvia from the mummies—the faint light emitted by the

torches for want of air—the Arabs, naked and covered with dust, resembling walking mummies themselves—rendered the penetration of the subterranean abodes a horrible and somewhat perilous enterprise. Exhausted with exertion and heat, and half-stifled by the close air of the place, the adventurer sought to sit down to recover himself; but selecting the body of an Egyptian for the purpose, the mummy gave way beneath him like a band-box, with a crash of bones, rags, and wooden cases, raising a fresh cloud of dust.—The various classes of society are distinguishable by different modes of preservation. The bodies of the lower orders are not in wooden cases; the linen in which they are folded is coarse and scanty; they have no ornaments about them of any consequence, and appear to have been rudely or carelessly deposited; while the mummies of animals, cats, foxes, monkeys, and crocodiles, are frequently intermixed with them. The bodies of the better-conditioned classes occupy cases, some plain, others richly painted with well-executed figures; the mummies have often garlands of flowers, and leaves of the acacia, over their heads and breast; and, what is singular, their tombs are without the animals found in those of the com-

mon people. Belzoni states, that once he had to proceed through a passage about twenty feet long, connecting two large sepulchral chambers, so narrow as scarcely to allow of his body being forced through. This was owing to the piles of mummies on either hand, between which he could not make his way without bringing his feet in contact with that of some decayed Egyptian; but the passage inclining downwards in the direction he was going, the weight of his body helped him on, though he could not avoid being covered with bones, legs, arms, and heads, rolling from above, disturbed by his progress.

As far as information extends, there are only two places besides Egypt, where the custom of preserving the bodies of the dead has generally prevailed.

Upon the discovery of the Canary islands, the natives were found in the habit of embalming their dead, and depositing them in caves. When the embalming process was complete, the body was sewn up in goat-skins, and bandaged with leather; the chiefs had a sarcophagus formed of a hollow tree; but in all cases cave-burial obtained. In one spacious sepulchre, in a steep cliff, in Teneriffe,

upwards of a thousand mummies were found, and five or six were commonly joined together, the feet of one being sewed to the head of the next.

It is singular that this practice is at present observed by some of the Indian tribes of South America, handed down from remote antiquity. The cave of Ataruipe, the sepulchre of an extinct nation, situated on the banks of the Orinoco, in the midst of magnificent scenery, is finely described by Humboldt. Here were found upwards of six hundred skeletons in good preservation. The bones had either been whitened in the sun and air, or dyed red with a colouring matter, or, like mummies, were covered with odorous resins, and enveloped in leaves of heliconia and banana.

We have no clue to the views of the Indian tribes in this remarkable usage, but, with reference to the Egyptians, the endeavour to protract the period of the body yielding to natural decay, by spices and fumigation, seems to have sprung from corrupt ideas of a future life, and illustrates the intense eagerness with which they clung to the thought of being, enveloped in a cloud of dark incertitude. The metempsychosis, or the passage of the soul through

a series of migrations, in connexion with animal forms, after its departure from the body, returning to it again at a certain period, was an Egyptian tenet; and hence the care bestowed upon the preservation of the body, to prevent the expectation from being disappointed by corruption and the worm. The sublime doctrine of an immortal existence was not grasped by them, but only a feeble hope of some indeterminate duration—a hope which decay might destroy, an insignificant reptile annihilate. Thus, the wisdom of Egypt, employed in planting architectural monuments upon the soil, which have resisted the mouldering hand of time, and are absolutely bewildering to modern thought, by their vastness, was "foolishness" in comparison with the intelligence of the Christian rustic.

At Petræa, the ancient capital of Idumæa, now presenting a mass of deserted ruins in a superb inclosure of rocks, the cliffs of that singular defile are pierced with myriads of tombs, some simple unadorned holes, others displaying a series of interior chambers, with great architectural decoration in front. An unfinished excavation attracted the attention of Laborde, an apartment scooped out in the rock, with places

formed for the bodies prepared, but only the capitals of some columns executed, intended to ornament the outside, as if the great expense of the work, exceeding, perhaps, the means of the family to which it belonged, had led them to abandon the idea of completing it externally. The Khasné, called by the wandering Arabs the "treasury of Pharaoh," is the most extraordinary monument, but undoubtedly a sepulchre. The rock has been carved into the appearance of a magnificent edifice, consisting of pillars supporting a pediment, the peculiarity of the material, a compact freestone tinged with oxyde of iron, giving a magical effect to the structure, a limpid rosy hue harmoniously blending with the sombre colour natural to the mountain. The whole has been well preserved by the adjacent cliffs serving as a protection against the winds and rains, the statues and bases of the columns alone exhibiting signs of deterioration, caused by humidity, corroding the parts most in relief, or nearest to the earth. Laborde found behind this external splendour, a disappointing interior, a chamber in front, and two smaller lateral chambers, regularly formed, but without the slightest ornament, suggesting the idea of the

work having been stopped as soon as the general plan was executed. One of the side chambers presented two hollows, apparently intended for coffins, in which the founders of the monument might have been placed provisionally, until the more magnificent receptacle designed in front should be completed.

The Greeks, especially of the colonies in Asia Minor, have left near the sites of their cities remarkable sepulchral caves, which now serve to identify them by inscriptions, and upon the construction of which their fine taste has been liberally expended. The "mountain of tombs" which marks the site of Telmessus, of which the little village or port of Macry is the modern representative, presents the appearance of finely-built temples, porticoes with Ionic columns, gates, and doors, beautifully sculptured, in which are carved the representations of bolts and hinges, resembling embossed work, —yet every such appearance, however entire the parts which compose it, preserves, upon examination, the consistency of one stone. As a consequence, the singular spectacle is exhibited at one point, of a column broken off at the base, but remaining suspended by the capital. The interiors are small rooms, with

benches running along three sides, upon which the coffins or urns have been placed. Some are larger, affording accommodation for mourners within them. The tombs are of several styles and various dates, the more modern being referred by professor Porson, from an inscription, to a date "evidently older than the hundredth Olympiad," or probably before 377 B.C. The sepulchral and other remains of the ancient Greeks in Asia Minor, have recently been investigated by sir C. Fellows, with interesting and important results. The inscriptions discovered, show that the domestic affections were fondly cherished by some; and it is pleasing to meet with such records of parental and filial love, among a people who were "without God," and exposed to the debasing influence of a vicious mythology.

Connected with several living cities, there are vast sepulchral caverns or catacombs, not, however, originally designed to accommodate the dead, but appropriated to that purpose from convenience or necessity.

The Roman catacombs are the most interesting of the class, having served the purpose of places of worship for the Christians of the city, during the early persecutions, and also of

burial for their dead. They consist of subterranean galleries formed in quarrying materials to extend and beautify the capital; in ancient times, and also to obtain the pozzuolana, or volcanic earth, which yields the Roman cement of commerce. These galleries turn and twist in the most capricious manner, probably following veins of pozzuolana, which accounts for their involved structure. Estimates of their length, taking in all their ramifications, have been given at six miles, but, owing to obstructions through the fall of the sides and roofs, they can only be penetrated to a comparatively small extent. The passages are usually about eight feet high, and five wide; three tiers of cells, used as graves, run along them on either hand; and at irregular intervals, several passages open into one another, forming large vaulted chambers, having a church-like appearance. After remaining neglected and forgotten, through the long interval of disorder which followed the Roman empire, the catacombs were re-opened in the sixteenth century, and subsequently, thoroughly explored by Bosio and others; the former spending nearly a lifetime in them, enthusiastically devoting himself to the task of tracing their windings and

copying their antiquities, meeting with adventures in these gloomy crypts, similar to those of Belzoni in the tombs of Thebes. Eventually, they were despoiled of their inscriptions, sepulchral tablets, bas-reliefs, and other monuments, which are now in the museums of Rome, particularly in the Galleria Lapidaria of the Vatican.

The occupancy of the Catacombs by the Christians in life and death is beyond dispute. It has been supposed, that Christianity, spreading among the "sand-diggers," or pozzuolana excavators—an extremely low grade in the city, well acquainted with the intricate subterranean passages—they pointed them out as places of asylum for the living, when pressed by persecution, (often, alas! in vain, for they were tracked and slain in these retreats,) and of deposit for the bodies of the martyrs, whose remains their brethren were naturally anxious to preserve from further outrage. Other converts wishing to be buried near them, the catacombs thus became the common cemetery of the church in Rome. Jerome, in the fourth century, tells us, that the devout on Sundays were accustomed to go down into the crypts dug in the heart of the earth, where the walls on either side were lined with the dead, to visit

the graves of the martyrs; and he forcibly describes the awe with which he himself was struck by their gloom, and religious associations, on the visits which he paid to the capital when a student. They also met there, we learn from history, for the occasional celebration of the eucharist, the love-feasts, or agapæ, and for the purpose of prayer. The last practice is referred to in the following inscription, belonging to the times of the fifth persecution, which began A.D. 161 :—

"In Christ. Alexander is not dead, but lives beyond the stars, and his body rests in this tomb. He lived under the emperor Antonine, who, foreseeing that great benefit would result from his services, returned evil for good. For, while on his knees, and about to sacrifice to the true God, he was led away to execution. Oh, sad times! in which sacred rites and prayers, even in caverns, afford no protection to us."—

Other martyr records are as follows :—

"In Christ. In the time of the emperor Adrian, Marius, a young military officer, who had lived long enough, when with his blood he gave up his life for Christ. At length he rested in peace. The well-deserving set up this with tears, and in fear. On the sixth ides of December."

"Here lies Gordianus, deputy of Gaul, who was murdered, with all his family, for the faith. They rest in peace. Theophila, his handmaid, set up this."

The mass of the inscriptions are in Latin, often misspelt and ungrammatical, but generally simple, and in many cases extremely affecting; as, *Dormitio Elpidis*, "the sleeping-place of Elpis."—*Virginius parum stetit*, ap. n., "Virginius remained but a short time with us."—"Victorina sleeps."—"Zoticus, laid here to sleep."—"Gemella sleeps in peace." The characteristic descriptions repeatedly occur:—"In peace."—"In peace, and in Christ."—"In Christ, the first and the last."—"Servant of God."—"Friend of all men."—"Enemy to none."—"Handmaid of God." The emblem of the believer's hope and immortality, the cross rudely carved, is common on the tablets. Dr. Maitland remarks upon the gentle and amiable spirit breathed by these records, and their distinctive character being so essentially Christian:—"The name of Christ is repeated in an endless variety of forms, and the actions of his life are figured in every degree of rudeness of execution. The second person of the Trinity is neither viewed in the Jewish light of a temporal Messiah, nor degraded to the Socinian

estimate of a mere example, but is invested with all the honours of a Redeemer. On this subject there is no reserve, no heathenish suppression of the distinguishing feature of our religion. On stones innumerable appears the good Shepherd, bearing on his shoulders the recovered sheep, by which many an illiterate believer expressed his sense of personal salvation. One, according to his epitaph, 'sleeps in Christ;' another is buried, with a prayer that 'she may live in the Lord Jesus.' But most of all, the cross in its simplest form is employed to testify the faith of the deceased; and whatever ignorance may have prevailed regarding the letter of holy writ, or the more mysterious doctrines contained in it, there seems to have been no want of apprehension of that sacrifice whereby alone we obtain remission of our sins, and are made partakers of the kingdom of heaven." The following tells against the constrained celibacy of the Romish church, and points to the sublime views of Christianity respecting a future life:—"Petronia, a priest's wife, the type of modesty—In this place I lay my bones; spare your tears, dear husband and daughters, and believe that it is forbidden to weep for one who lives in God. Buried in

peace, on the third nones of October, in the consulate of Festus."

In all civilized communities, affection has displayed its solicitude for the departed, and sought consolation under its loss, by doing honour to the remains of long-loved and cherished friends. Filial feeling, and parental tenderness, and conjugal regard, have marked with some fond memorial and expressive inscription, the place where their ashes repose. In heathen cemeteries, we find dignified, brief, and unaffectedly simple epitaphs, relating to the virtues of the deceased, and the grief of the survivors; but there is a sadness in the strain, which shows that the dim tearful eye of the mourner could catch nothing refreshing in the aspect of the future. Witness the following from the Roman catacombs:

"Caius Julius Maximus,
2 years and 5 months.
O relentless Fortune, who delightest in cruel death,
Why was Maximus so early snatched from me?
He, who lately used to lie, beloved, on my bosom;
This stone now marks his tomb—behold his mother."

We may go to the tomb of Themistocles, by the "watery strand," or to the gigantic tumuli of the Lydian kings on the plain of the Hermus, or to the sepulchral caves of the Myusians by the waters of the Mæander, but no record

breathing of the "hope of righteousness," is there, in connexion with the ashes of the dead. In life, they could speak of death, a theme that gave point to their morals, and pathos to their poetry; they could pronounce funeral orations for the departed, and pile a monument to perpetuate their memory; but this was all that they could do for others, and all that the hand of friendship could do for them. There were, indeed, occasional aspirations in a few lofty minds after a better country, beyond the grave—sudden gleams and fitful flashes of immortality breaking through its darkness—but there was no foundation upon which confidence might be based, and the vision of the multitude was bounded by the limits of an earthly sphere.

Christianity triumphantly contrasts with heathen philosophy, and pagan superstition. It is emphatically a revelation of "life and incorruption"—of the spirit of man surviving the stroke of death, and the body rising from the dissolution to which it is subject—a revelation, too, not only of immortal existence, but of the means by which that existence may be perpetuated in the highest blessedness. It turns the attention of the believer from the

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